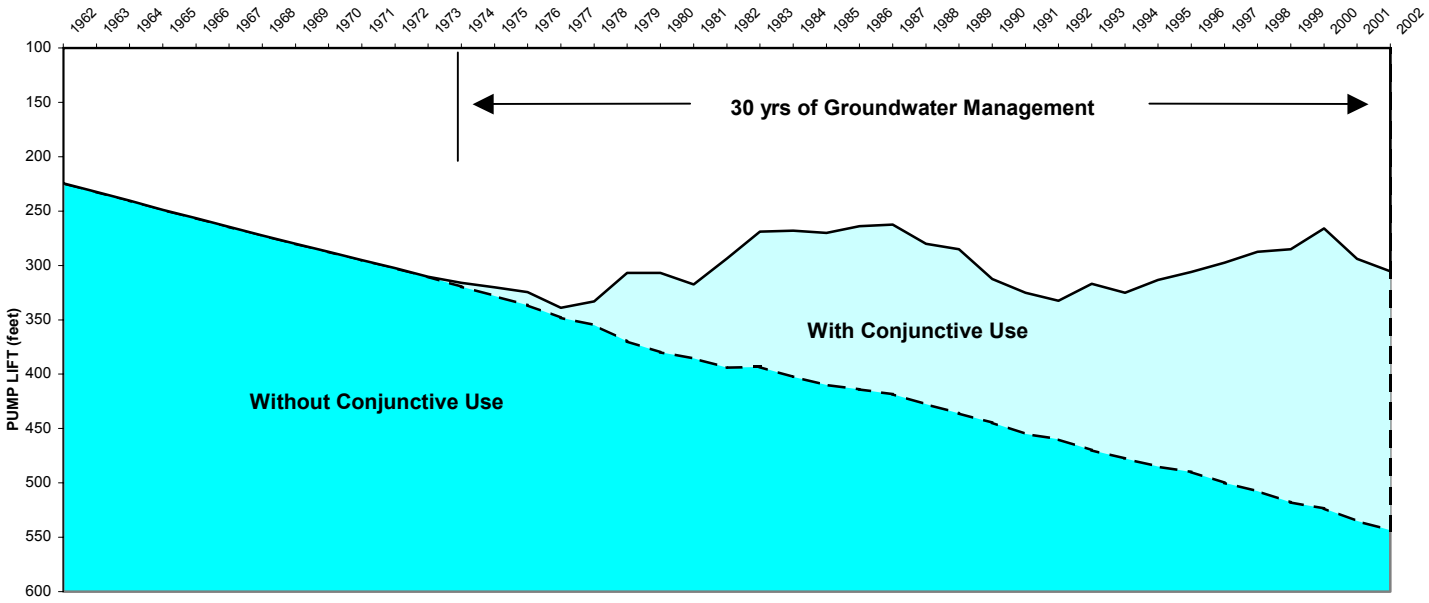
SEMITROPIC WATER STORAGE DISTRICT
KERN COUNTY, CALIFORNIA

GROUNDWATER MANAGEMENT PLAN
Volume 1

History of Groundwater Pumping Lifts in Semitropic Water Storage District



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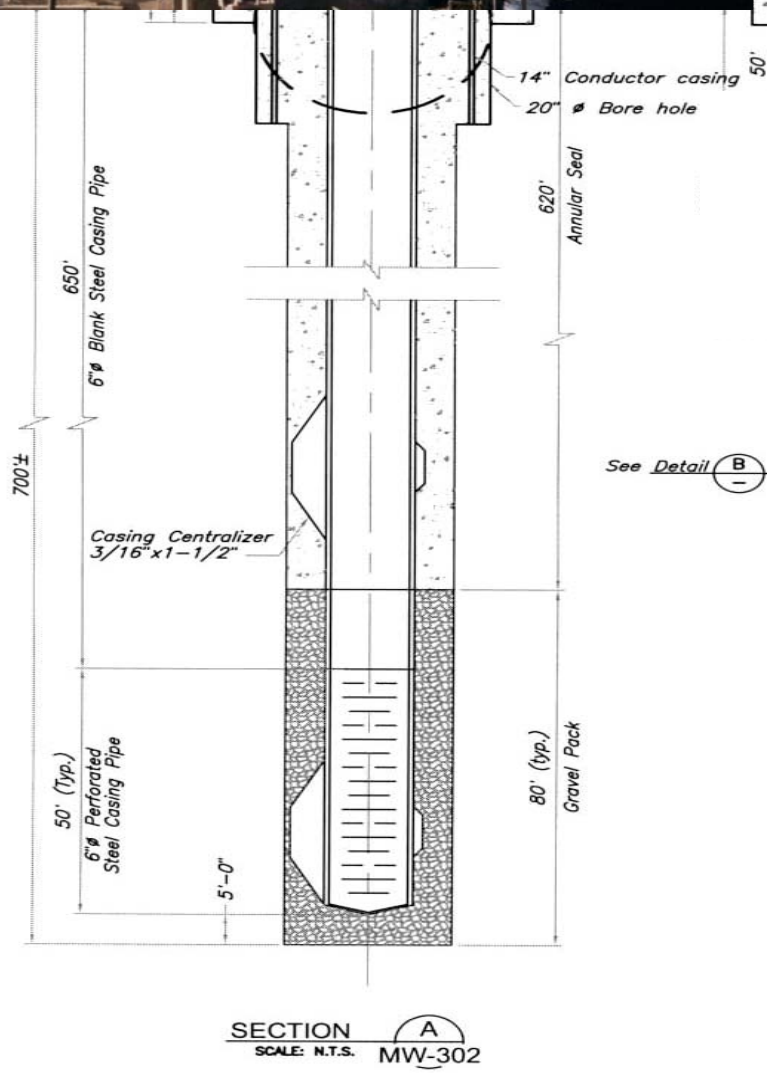
Adopted
September 2003

"Typical" Monitor Well under construction in Semitropic Water Storage District in 2003.



SECTION A
SCALE: N.T.S. MW-302

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(bound separately)

Required and Recommended Components of Local Groundwater Management Plans[(a)]

Compliance Matrix

DWR recommends that the components identified below be included in a groundwater management plan to be implemented by a local managing entity. Consideration and development of these components for the specific conditions of the area to be managed under the plan will help to ensure effective groundwater management.

Recent amendments to Water Code Section 10750 *et seq.* , enacted through the passage of SB1938 (Stats 2002, Ch 603), require <u>new</u> groundwater management plans prepared under that authority (commonly referred to as AB3030 Plans) to include the first component below.

		Reference
	1 Include documentation that a written statement was provided to the public "describing the manner in which interested parties may participate in developing the groundwater management plan," which may include appointing a technical advisory committee (Water Code § 10753.4 (b)).	● "Public and Agency Involvement"
(b)	2 Include a plan by the managing entity to "involve other agencies that enables the local agency to work cooperatively with other public entities whose service area or boundary overlies the groundwater basin." (Water Code § 10753.7 (a)(2)). A local agency includes "any local public agency that provides water service to all or a portion of its service area." (Water Code § 10752 (g)).	● "Regional Agency Involvement" ● "Public and Agency Involvement"
(b)	3 Provide a map showing the area of the groundwater basin, as defined by DWR Bulletin 118, with the area of the local agency subject to the plan as well as the boundaries of other local agencies that overlie the basin in which the agency is developing a groundwater management plan (Water Code § 10753.7 (a)(3)).	● Figure 2 ● Figure 2
	4 Establish an advisory committee of stakeholders (interested parties) within the plan area that will help guide the development and implementation of the plan and provide a forum for resolution of controversial issues.	●"Regional Agency Involvement" ●"Public and Agency Involvement"
	5 Describe the area to be managed under the plan, including:	
	a. The physical structure and characteristics of the aquifer system underlying the plan area in the context of the overall basin.	● "Management Area"
	b. A summary of the availability of historical data including, but not limited to, the components in Section 7 below.	● "Groundwater Basin Characteristics"
	c. Issues of concern including, but not limited to, issues related to the components in Section 7 below.	● Surface Water Supplies and Demand"
	d. A general discussion of historical and projected water demands and supplies.	● "Monitoring"
(b)	6 Establish management objectives (MOs) for the groundwater basin that is subject to the plan. (Water Code § 10753.7 (a)(1)).	●"Basin Management Objectives"

		Reference
(b)	7 Include components relating to the monitoring and management of groundwater levels, groundwater quality, inelastic land surface subsidence, and changes in surface flow and surface water quality that directly affect groundwater levels or quality or are caused by groundwater pumping. (Water Code § 10753.7 (a)(1)). Consider additional components listed in Water Code § 10753.8 (a) through (l).	●"Monitoring"
	8 For each MO, describe how meeting the MO will contribute to a more reliable supply for long-term beneficial uses of groundwater in the plan area, and describe existing or planned management actions to achieve MOs.	●"Basin Management Objectives"
(b)	9 Adopt monitoring protocols for the components in Section 7 (Water Code § 10753.7 (a)(4)). Monitoring protocols are not defined in the Water Code, but the section is interpreted to mean developing a monitoring program capable of tracking changes in conditions for the purpose of meeting MOs.	●"Monitoring"
	10 Describe the monitoring program, including:	
	a. A map indicating the general locations of any applicable monitoring sites for groundwater levels, groundwater quality, subsidence stations, or stream gages.	● Figure 17 ●maps Appendix 2
	b. A summary of monitoring sites indicating the type (groundwater level, groundwater quality, subsidence, stream gage) and frequency of monitoring. For groundwater level and groundwater quality wells, indicate the depth interval(s) or aquifer zone monitored and the type of well (public, irrigation, domestic, industrial, monitoring).	● Maps with Appendix 2 ● Table 1.
	11 Describe any current or planned actions by the local managing entity to coordinate with other land use, zoning, or water management planning agencies or activities. (Water Code § 10753.8 (k), (l))	●"Regional Agency Involvement" ● "Public and Agency Involvement"
	12 Provide for periodic report(s) summarizing groundwater basin conditions and groundwater management activities. The report(s), prepared annually or at other frequencies as determined by the local management agency, should include: a. Summary of monitoring results, including a discussion of historical trends. b. Summary of management actions during the period covered by the report. c. A discussion, supported by monitoring results, of whether management actions are achieving progress in meeting MOs. d. Summary of proposed management actions for the future. e. Summary of any plan component changes, including addition or modification of MOs, during the period covered by the report. f. Summary of actions taken to coordinate with other water management and land use agencies, and other government agencies.	●"Data Management, Interpretation, and Reporting" ● Appendix 2.
	13 Provide for the periodic re-evaluation of the entire plan by the managing entity.	● "Plan Review"
	14 For local agencies not overlying groundwater basins, plans should be prepared including the above listed components and using geologic and hydrologic principles appropriate to those areas (Water Code § 10753.7 (a)(5)).	Not Applicable

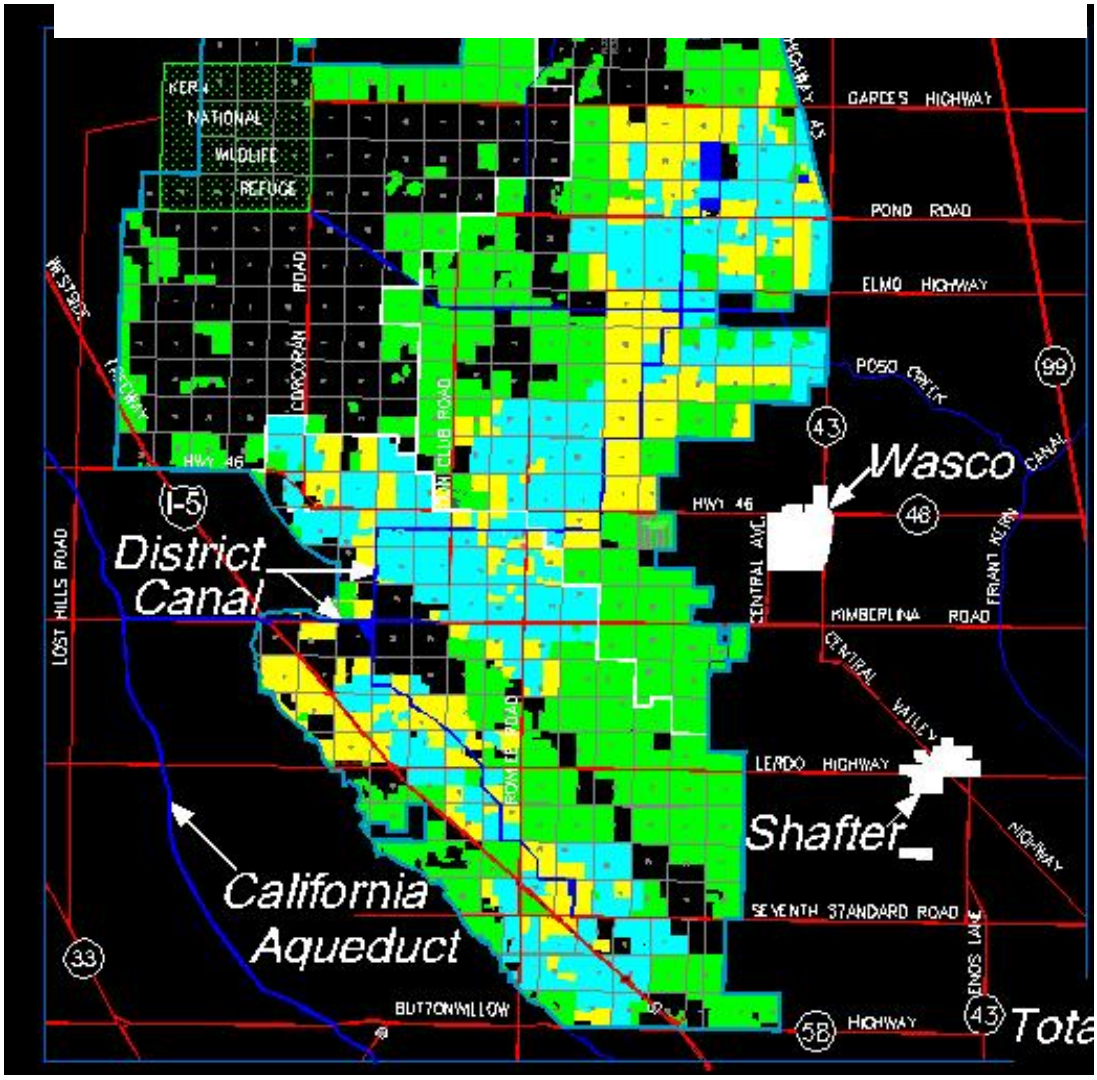
(a) DWR, 2003 Draft of Bulletin 118

(b) To be eligible for funding administered by DWR for groundwater or groundwater quality projects, an agency must prepare and implement a groundwater management plan that includes this component.

BACKGROUND

Semitropic Water Storage District (Semitropic or District) includes a gross area of about 221,000 acres located in northwest Kern County. About 125,000 acres are developed to irrigated agriculture, which contributes to the approximately $2 billion of annual agricultural production in Kern County.

Semitropic Water Storage District



Groundwater Service Area

Temporary Contract Surface Water Service Area

Contract Surface Water Service Area

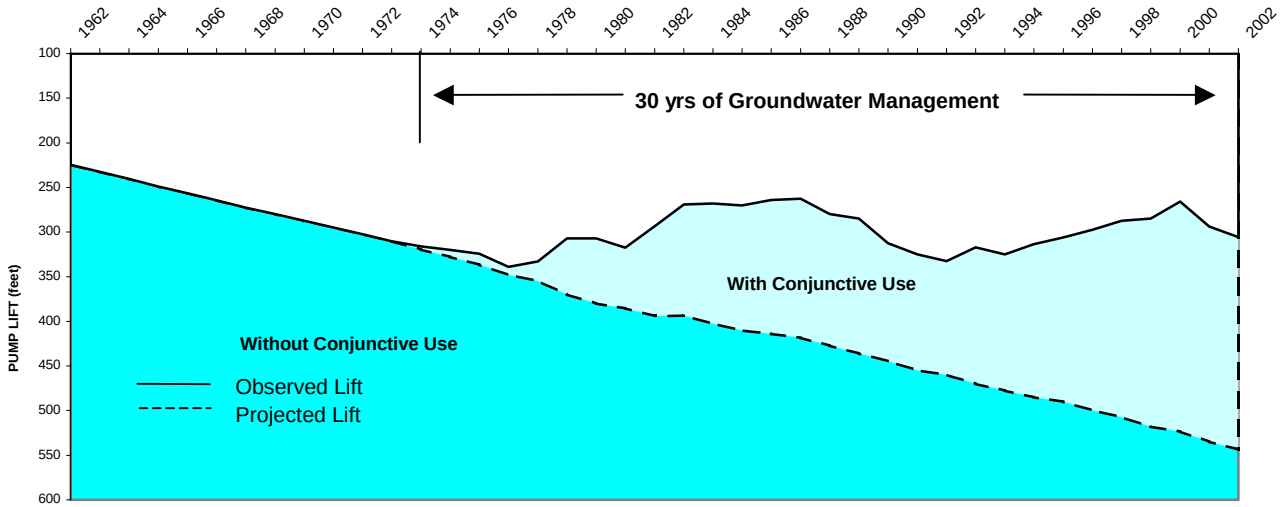
In-lieu Water Service Area

Prior to formation of the District and adoption and construction of a project, irrigated agricultural development relied completely on pumped groundwater. As in other areas developed in reliance on pumped groundwater, water levels declined

as water was pumped for beneficial use. To address the developing problem, the District was organized in 1958 to develop conjunctive use programs and facilities and, in particular, to import water to supplement the area's water needs. Semitropic began importing State Water Project (SWP) water in 1973; however, shortages in SWP supplies have been more frequent and larger than originally envisioned, owing to the incomplete status of the State Water Project facilities and new and unforeseen regulatory restrictions on export from the Sacramento-San Joaquin River Delta.

Semitropic has implemented various measures over the years to promote (in-lieu) recharge, reduce overdraft, and to ameliorate the consequences of water supply deficiencies of the SWP. These measures have included: temporary water-service connections; water-pricing initiatives; connection of landowner wells to the District's main conveyance system; interconnection of facilities with neighboring districts; purchase and importation of available water supplies; and implementation of the Semitropic Groundwater Banking Project. Following is a figure (History of Groundwater Pumping Lifts) which illustrates the results of the District's conjunctive-use practices over the last 30 years.

History of Groundwater Pumping Lifts in Semitropic Water Storage District



Respecting water banking, the District and a group of Banking Partners established a water bank, which is referred to as the Semitropic Groundwater Banking Project (1994). Under this Project, the District takes delivery of (i.e., banks) "wet-year"

water, which is used to turn off wells and temporarily improve groundwater levels, and recovers and returns groundwater during "dry" years. In this regard, Semitropic has expanded its delivery capability from about one-third of the irrigated acreage (in the late 1970s) to about two-thirds at present (with plans to increase to about 90 percent of the irrigated area). The District is pursuing a significant expansion of its Groundwater Banking Project which would provide for the construction of additional main conveyance and distribution facilities.

The accomplishments of the District in managing the groundwater resource are further detailed in the Section on "Conjunctive Use of Surface Water and Groundwater".

INTRODUCTION

The Semitropic Water Storage District designed its irrigation distribution system projects on conjunctive use and management of its surface water and groundwater resources. The District desires to formalize its existing groundwater management activities, to ensure the long-term sustainability of its resources. In addition, the District intends to coordinate its activities with neighboring districts and to review and modify its existing monitoring activities in order to preserve and enhance the groundwater resource for the benefit of its landowners. The District proposes to organize its existing groundwater management activities under provisions of California Water Code 10750 et seq., which were added through enactment of AB-255, later replaced by AB-3030, and modified by SB-1938.

Preservation and enhancement of the groundwater resource is vital to sustaining the local economies which have been built up in reliance, in whole or in part, on this resource. The District's objective is to preserve the utility of the groundwater resource within its area, both in terms of quantity and quality. Further, enhancement or augmentation of the resource is necessary to mitigate the present level of overdraft in the regional groundwater basin (including areas outside of the District) and the attendant long-term decline in groundwater levels. Economically, the District's objective is to accomplish the stated objectives at least cost.

Since the District has been actively engaged in groundwater management for over 30 years, this plan includes, to a large extent, a description of management activities which are currently in place.

AUTHORITY AND POWERS

The subject Groundwater Management Plan requires a public body, endowed with appropriate powers, to carry out the Plan. California Water Code Sections 10750 et seq. provide the necessary powers. Many of the powers granted to a water replenishment district are granted to the agency organizing its program under the cited provisions of the Water Code. Powers granted to an agency which adopts a groundwater management plan include the following:

- The agency may take any actions needed to replenish the groundwater within the agency, including buying and selling water, delivering water in lieu of groundwater pumping, and spreading water for recharge.
- The agency may take actions needed to protect or prevent interference with water, water quality, or water rights within the agency.
- The agency may take any actions necessary to put water under its control to beneficial use.
- The agency may take any action needed to preserve the water within the agency for beneficial uses based on water quality goals to prevent contaminants from entering the agency groundwater supplies, removing contaminants, locating and characterizing contaminants within the agency, identifying parties responsible for contamination of groundwater, and performing studies relative to the water quality goals.
- The agency may take any action needed outside of the agency if these actions are required to protect the agency's groundwater supplies, and there is a relationship between the groundwater where the action is taken and the agency's groundwater.
- The agency may sue to recover the amount of agency expenditures for protection of groundwater quality from parties responsible for the contamination.

- The agency is granted additional powers of a Replenishment District, which allows it to:

  a. Acquire and operate facilities, waters and rights needed to replenish the groundwater supplies;

  b. Store water in groundwater basins, acquire water rights, import water into the agency and conserve water;

  c. Participate in legal proceedings as required to defend water rights, and water supplies, and to prevent unlawful exportation of water from the agency;

  d. Under certain conditions, to exercise the right of eminent domain;

  e. Act jointly with other entities in order to economically perform required activities;

  f. Carry out investigations required to implement programs;

  g. Fix rates for water for replenishment purposes; and

  h. Fix the terms and conditions of contracts for use of surface water in-lieu of groundwater.

- The agency must investigate the use of existing facilities of other agencies to carry out programs under the plan, and if economically feasible and in the best interest of the agency, an attempt should be made to enter into contracts with other agencies for use of their facilities.

Most of these powers are already provided under Water Storage District law (Division 14 of the Water Code) and many are already being exercised under the District-approved projects. In addition, the District would be authorized to adopt rules and regulations to implement and enforce the adopted Management Plan. The District would (upon adoption of the Plan) also have the authority to levy and

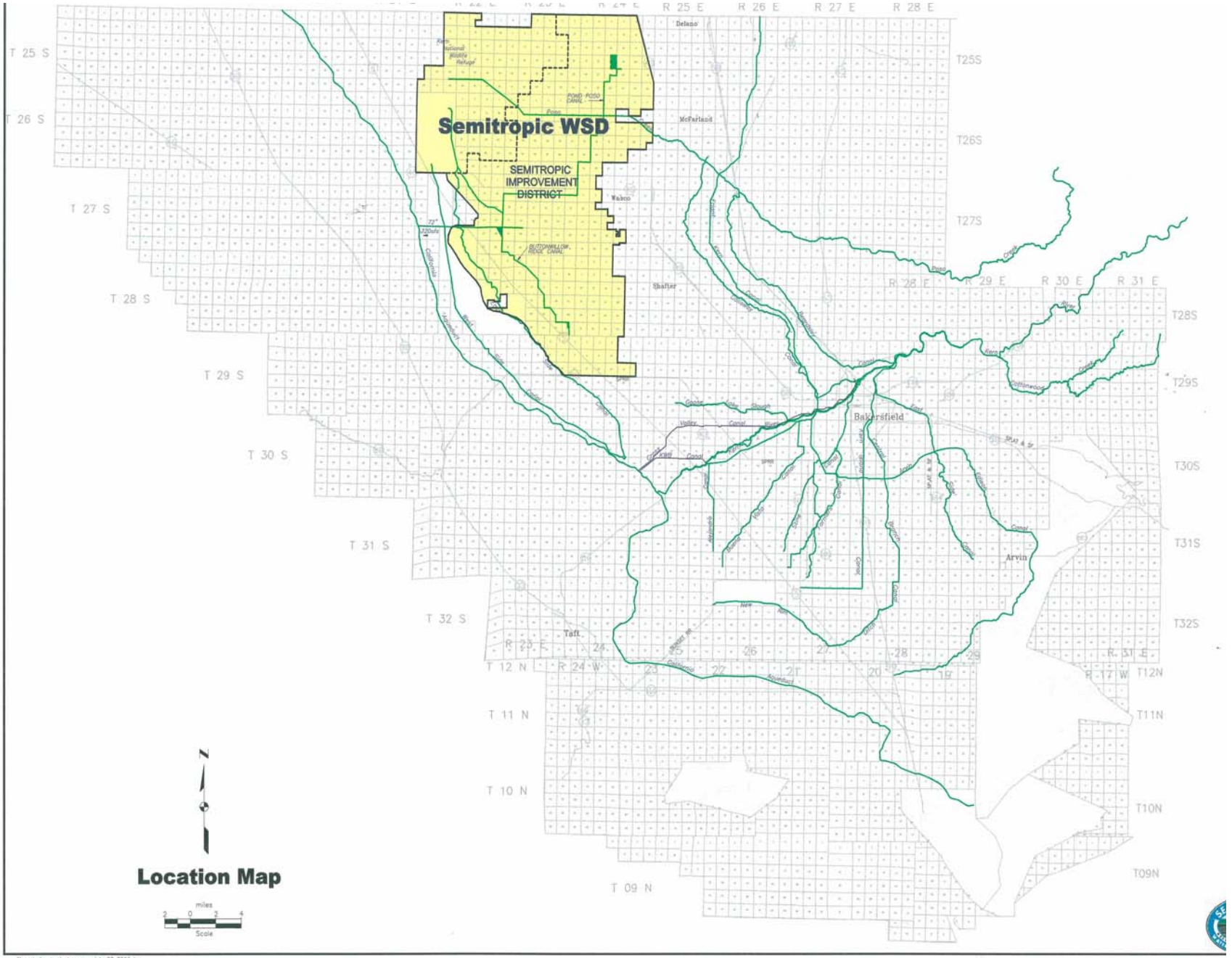
collect general groundwater replenishment assessments, as well as water extraction fees based on the amount of groundwater extracted from the aquifer. However, these fees must be approved by a majority vote in an election, according to the election rules applicable to the District. Presently, levy of such an assessment or fee is not under consideration because, among other things, the District already levies a General Project Service Charge on those lands which have developed in reliance on groundwater.

MANAGEMENT AREA

The Management Area is defined as the area within the boundaries of the Semitropic Water Storage District, which is that portion of the groundwater basin over which the District has jurisdiction to implement specific management practices. The Semitropic Water Storage District is located in north-central Kern County in the San Joaquin Valley, about 20 miles northwest of the City of Bakersfield (reference Figure 1). Semitropic was organized in 1958 to provide supplemental water for irrigation within its boundaries. The total land area within Semitropic is approximately 221,000 acres (or 345 square miles), with about 125,000 acres (or 195 square miles) irrigated. It is noted that the irrigated area varies from year to year, depending on many factors.

The Semitropic Improvement District (reference Figure 1) includes the areas to which imported surface water supplies have been and are being delivered, and adjacent areas receiving benefits from the importation of surface water. The remainder of the District, outside the Improvement District and largely undeveloped for agriculture, receives a lesser benefit from District operations since no surface water is delivered in the area. In practice, the District is regarded as one management area, consisting of the entire District area.

Department of Water Resources (DWR) Bulletin No. 118 (Update 2003), *California's Groundwater*, delineates the boundaries of groundwater basins and sub-basins throughout California. The San Joaquin Valley portion of Kern County (or the Kern County sub-basin) is located within the San Joaquin Valley Basin of the Tulare Lake Hydrologic Region, as shown on Figure 2. Figure 3 focuses on Kern County and shows the location of the District in relation to the


Semitropic WSD
SEMITROPIC IMPROVEMENT DISTRICT
Delano
McFarland
Wasco
Shafter
Bakersfield
Arvin
Taft
T 25 S
T 26 S
T 27 S
T 28 S
T 29 S
T 30 S
T 31 S
T 32 S
T 12 N
T 11 N
T 10 N
T 09 N
R 25 E
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Location Map
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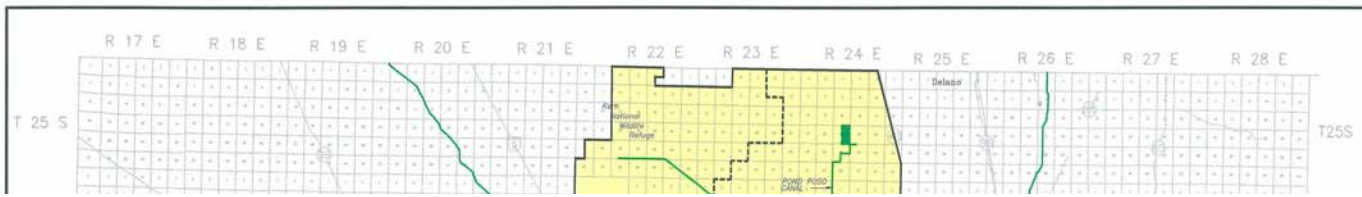
Scale

Figure No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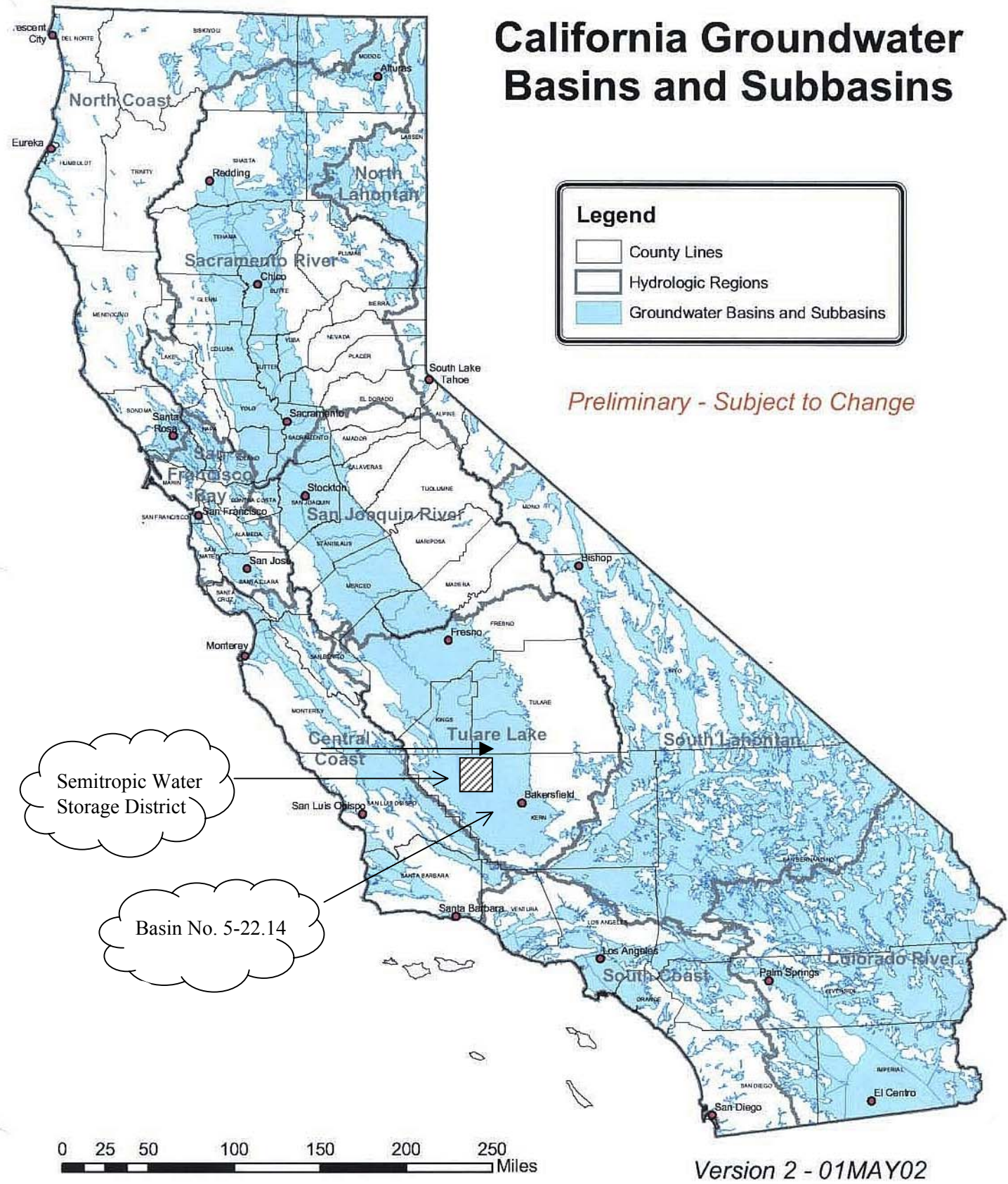
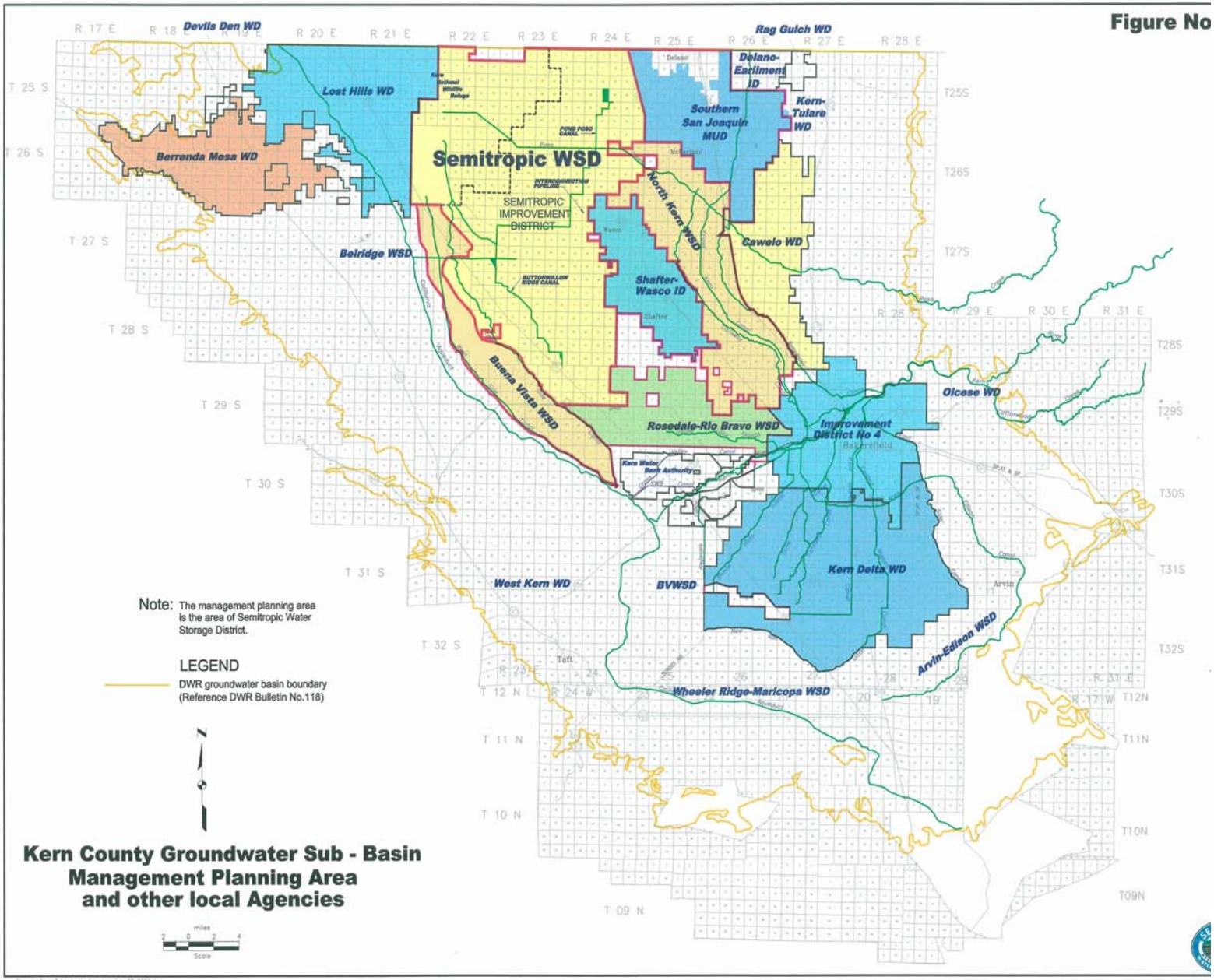


Source: www.waterplan.water.ca.gov/groundwater/gwb118map.htm

Figure No


Devils Den WD
Rag Gulch WD
Lost Hills WD
Delano-Earlimens ID
Southern San Joaquin MUD
Kern-Tulare WD
Berrenda Mesa WD
Semitropic WSD
SEMITROPIC IMPROVEMENT DISTRICT
North Kern WSD
Cawelo WD
Belridge WSD
Shafter-Wasco ID
Buena Vista WSD
Olcese WD
Rosedale-Rio Bravo WSD
Improvement District No 4
Kern Water Bank Authority
West Kern WD
BVWSD
Kern Delta WD
Arvin-Edison WSD
Wheeler Ridge-Maricopa WSD
Note: The management planning area is the area of Semitropic Water Storage District.
LEGEND
DWR groundwater basin boundary (Reference DWR Bulletin No.118)
N
Kern County Groundwater Sub - Basin Management Planning Area and other local Agencies
miles
Scale

No. 3

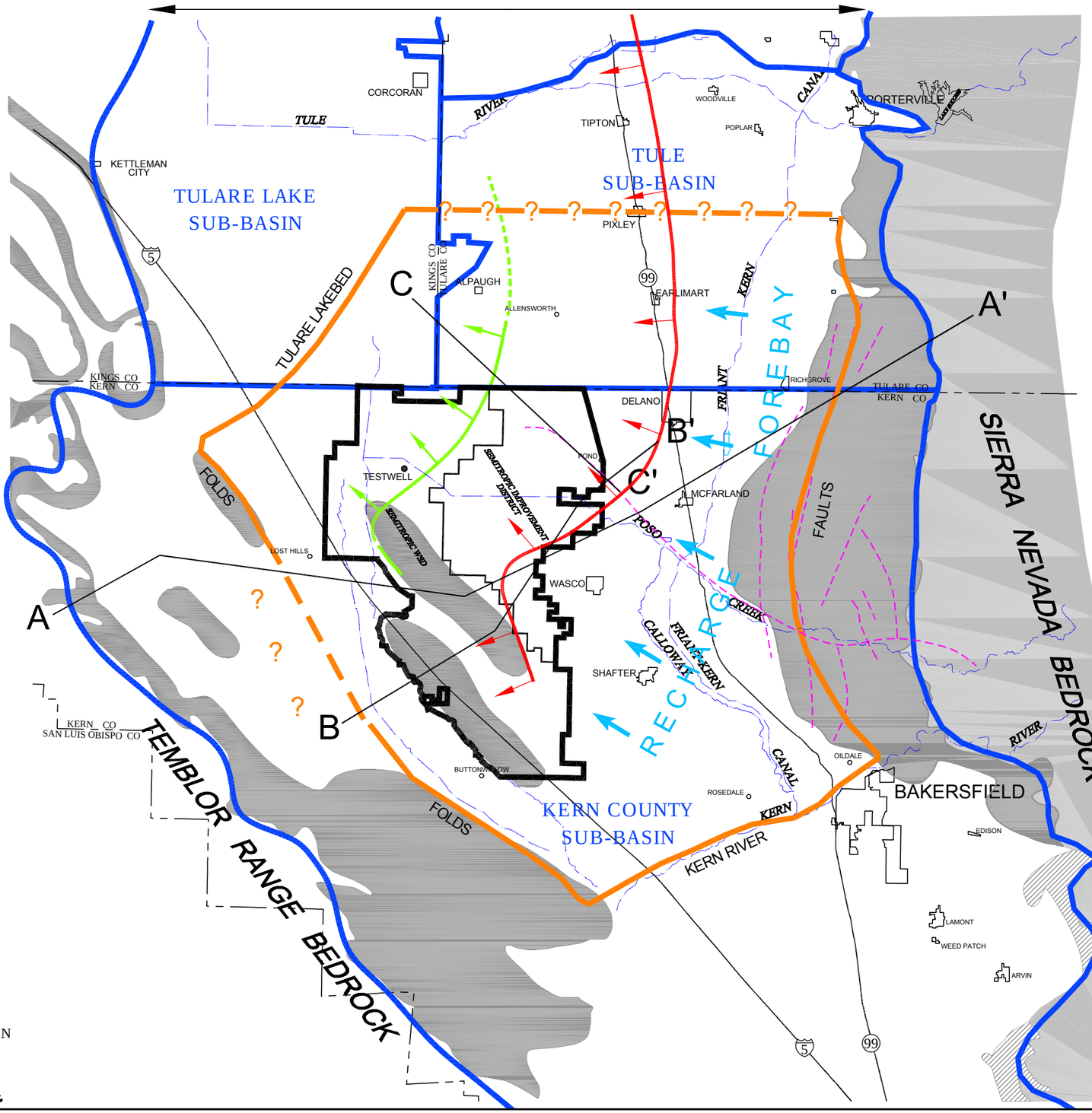
groundwater basin boundary identified by DWR. In particular, Semitropic is located within Groundwater Basin No. 5-22.14.

As suggested by the boundaries of the groundwater basin, the District shares a common (i.e., hydraulically connected) groundwater resource with neighboring water agencies. Accordingly, water management practices in Semitropic affect neighboring areas and vice versa. Although the District only has authority to enact specific management practices within its boundaries, the District may take actions to protect groundwater supplies from activities outside of its area. The Groundwater Management Plan includes management goals that would affect the groundwater outside District boundaries. As a practical matter, the area of influence is primarily within the Kern County sub-basin; however, parts of the Tule and Tulare Lake sub-basins may also be included.

GROUNDWATER BASIN CHARACTERISTICS

The portion of the Tulare Lake Hydrologic Region which has been judged to be hydraulically connected with the groundwater underlying the District is depicted illustratively on Figure 4. To the east, a series of faults effectively prevents significant hydraulic connection between the valley aquifer and the groundwater in the dissected uplands. To the south, historically, groundwater levels beneath the Kern River have been sufficiently high to effectively keep groundwater from south of the river from flowing across this groundwater divide. To the west, a series of southeast-plunging anticlines from the Kettleman Hills to the Lost Hills appear to be sufficiently uplifted to bring the sediments with poor hydraulic characteristics to the surface, effectively preventing groundwater flow across the axis of the folds. If groundwater were to flow from the Antelope Plains to the valley aquifer, it would flow southeast along the plunging folds to a small area in the vicinity of Buttonwillow. The Semitropic and Buttonwillow ridges may contain isolated pockets of connate groundwater; however, these ridges are considered to be within the groundwater basin. North of Township 27S, extensive clays of the Tulare Lakebed effectively create a barrier to that portion of the basin located to the west and northwest. To the northeast, groundwater flows between the Kern County sub-basin and the Tule sub-basin and, to a lesser extent, to the Tulare Lake sub-basin. The extent of the interconnection is not certain; however, groundwater elevations indicate that the depression that has historically developed in Kern County extends

TULARE LAKE HYDROLOGIC REGION



LEGEND:

- MAJOR ROAD
- CITY OR TOWN
- MAJOR STREAMS, CANALS OR WATERWAYS
- SEMITROPIC WATER STORAGE DISTRICT

FEATURES:

- DISSECTED UPLANDS
- SIERRA NEVADA BEDROCK
- A-CLAY
- E-CLAY (CONFINED IN DIRECTION OF ARROWS)
- FAULT LINES
- DWR SUB-BASINS
- EFFECTIVE GROUNDWATER BASIN
- UNCERTAIN HYDROLOGIC CONNECTION
- A — A' CROSS SECTION LOCATION

N

GRAPHIC SCALE

4 2 0 4 8

IN MILES

BASEMAP IS FROM 100K USGS TOPO
CALIFORNIA STATE PLANE, ZONE 5, NAD27, U.S. FEET

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ILLUSTRATIVE MAP OF EFFECTIVE GROUNDWATER BASIN

JULY 2003

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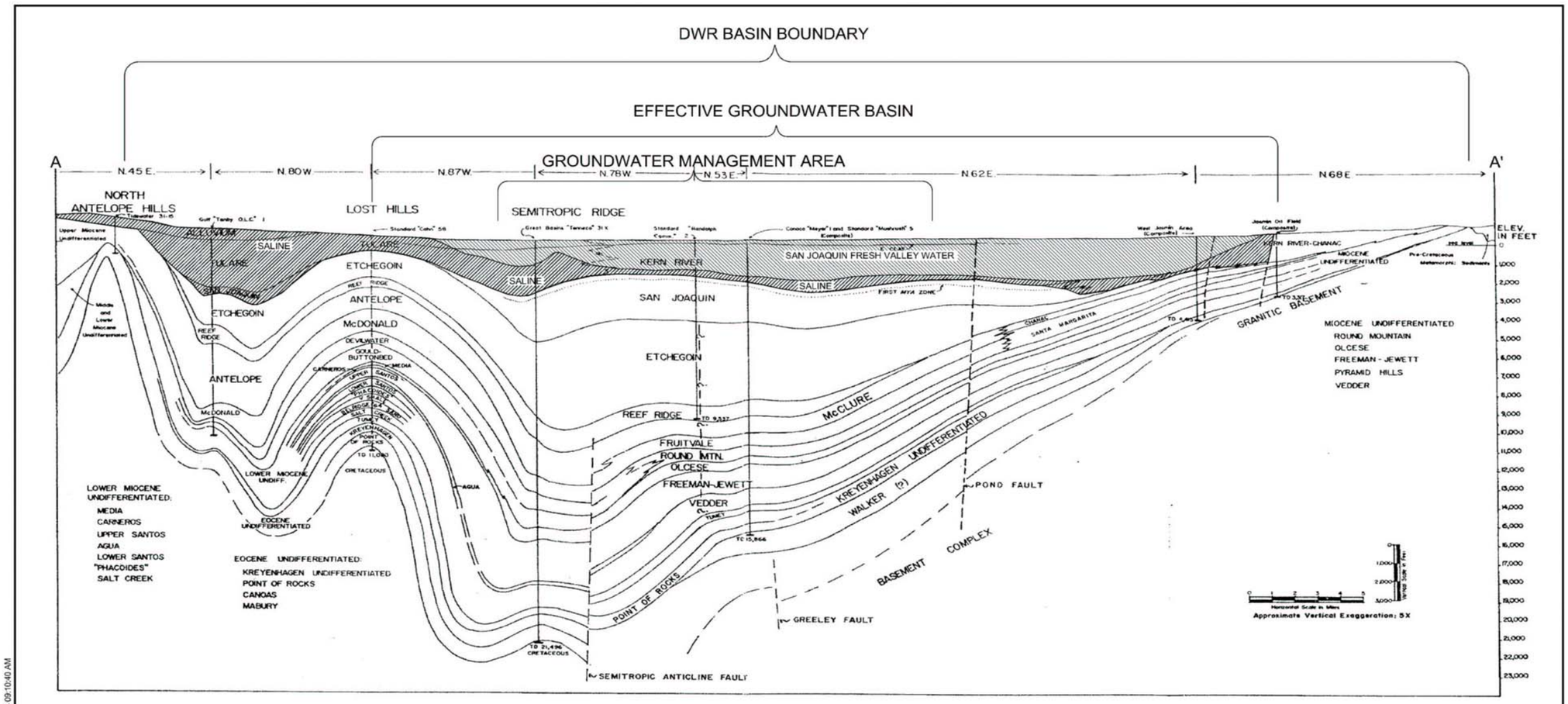
to about the middle of Township 23S. The effective groundwater area is considered to be the area south of Alpaugh and Pixley.

Within the boundaries discussed above, several thousands of feet of sediments have been deposited in an asymetrical northwest-to-southeast-trending trough, as shown on Figure 5 (reference cross section A-A' on Figure 4). The Antelope Plains form a parallel, though separate, trough. Only the upper few thousand feet are considered aquifer material. The District is located at the axis of the main valley trough where the Tulare and Kern River formations interfinger. The bases of these formations effectively define the lower extent of the aquifer; however, the lower portions contain brackish water, which is not considered suitable for beneficial use. The source of the saline west-side water is probably structurally controlled and reflects the poorer water quality typical of the lower part of the Tulare Formation that nears the surface on the west side. To the east, fresh water recharges the Kern River Formation, primarily from the Kern River, Poso Creek, Deer Creek, White River, and through extensive leakage from conveyance facilities which parallel the Friant-Kern Canal.

The Tulare Formation contains several thick, regionally extensive clay layers. The lowermost clay, the Corcoran member of the Tulare Formation or E-clay, is sufficiently thick to create confining conditions below. A cross section (B-B') through the District is shown in Figure 6 (reference Figure 4 for location). This cross section parallels the regional cross section (A-A') shown in Figure 5 (reference Figure 4 for location), but shows more detail within the Tulare and Kern River formations. There are five major aquifer zones: a shallow perched zone, the unconfined aquifer above the E-clay, a production zone of the "main" aquifer, a transition zone, and a lower saline aquifer (also reference Figure 7 for a northwest to southeast trending cross section, with location depicted on Figure 4). The descriptions of these zones, which are presented in the subsections which follow, are based on a location in T25S, R22E, a few miles southeast of the Kern National Wildlife Refuge (reference Figure 3).

The E-clay dips northwest and becomes over 100 feet thick and about 600 feet deep, where another regional clay, the A-clay, further splits the "unconfined" aquifer into a confined portion below and unconfined portion above. Where the E-clay exists, the aquifer below is referred to as the "main" aquifer (with an upper confined zone and a lower confined zone). To the southeast and east, the E-clay thins, splits as it nears the surface, and becomes hydraulically ineffective as it merges into the "forebay"- the unconfined part of the main aquifer that is hydraulically connected to



REF: *The portion of this profile west of Lost Hills is from cross-section A-A' of Geologic Map of Tamblor Range in Guidebook To Geology & Oilfields, Westside Southern San Joaquin Valley, 1968: Pacific Sections A.A.P.G., S.E.G., and S.E.P.M.*

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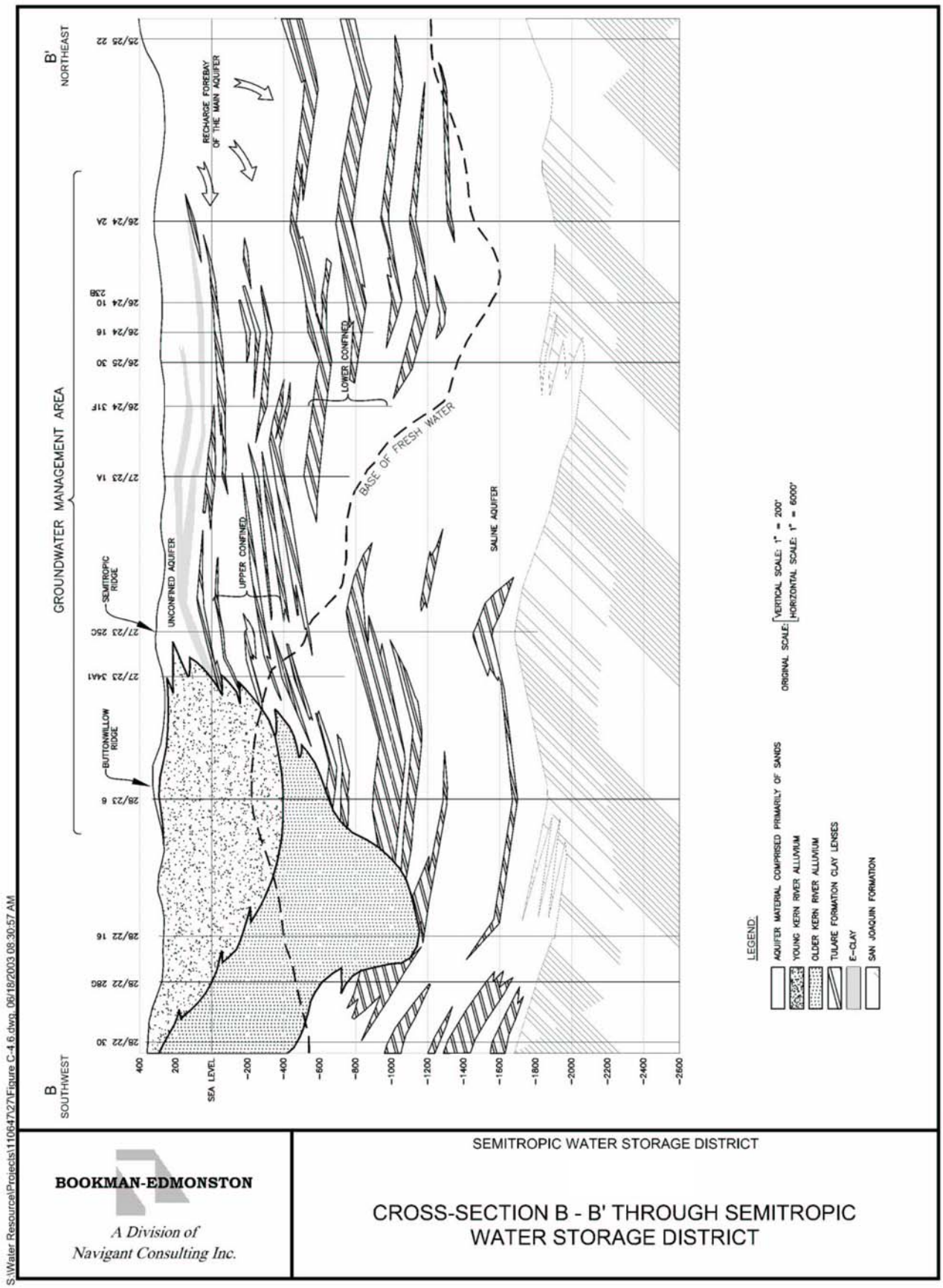
SEMITROPIC WATER STORAGE DISTRICT

CROSS-SECTION A-A' THROUGH SEMITROPIC WATER STORAGE DISTRICT
(REFERENCE FIGURE 4 FOR LOCATION

S:\Water Resource\Projects\110647\27\FIGURE C-4-5.dwg, 06/18/2003 09:10:40 AM

Figure 6


B
SOUTHWEST
B'
NORTHEAST
GROUNDWATER MANAGEMENT AREA
RECHARGE FOREBAY OF THE MAIN AQUIFER
UNCONFINED AQUIFER
UPPER CONFINED
LOWER CONFINED
BASE OF FRESH WATER
SALINE AQUIFER
SEMITROPIC RIDGE
BUTTONWILLOW RIDGE
SEA LEVEL
25/25 22
26/24 2A
26/24 10
26/24 16
26/25 30
26/24 31F
27/23 1A
27/23 25C
27/23 34A1
28/23 6
28/22 16
28/22 28G
28/22 30
400
200
-200
-400
-600
-800
-1000
-1200
-1400
-1600
-1800
-2000
-2200
-2400
-2600
LEGEND:
AQUIFER MATERIAL COMPRISED PRIMARILY OF SANDS
YOUNG KERN RIVER ALLUVIUM
OLDER KERN RIVER ALLUVIUM
TULARE FORMATION CLAY LENSES
E-CLAY
SAN JOAQUIN FORMATION
ORIGINAL SCALE: VERTICAL SCALE: 1" = 200'
HORIZONTAL SCALE: 1" = 6000'
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BOOKMAN-EDMONSTON
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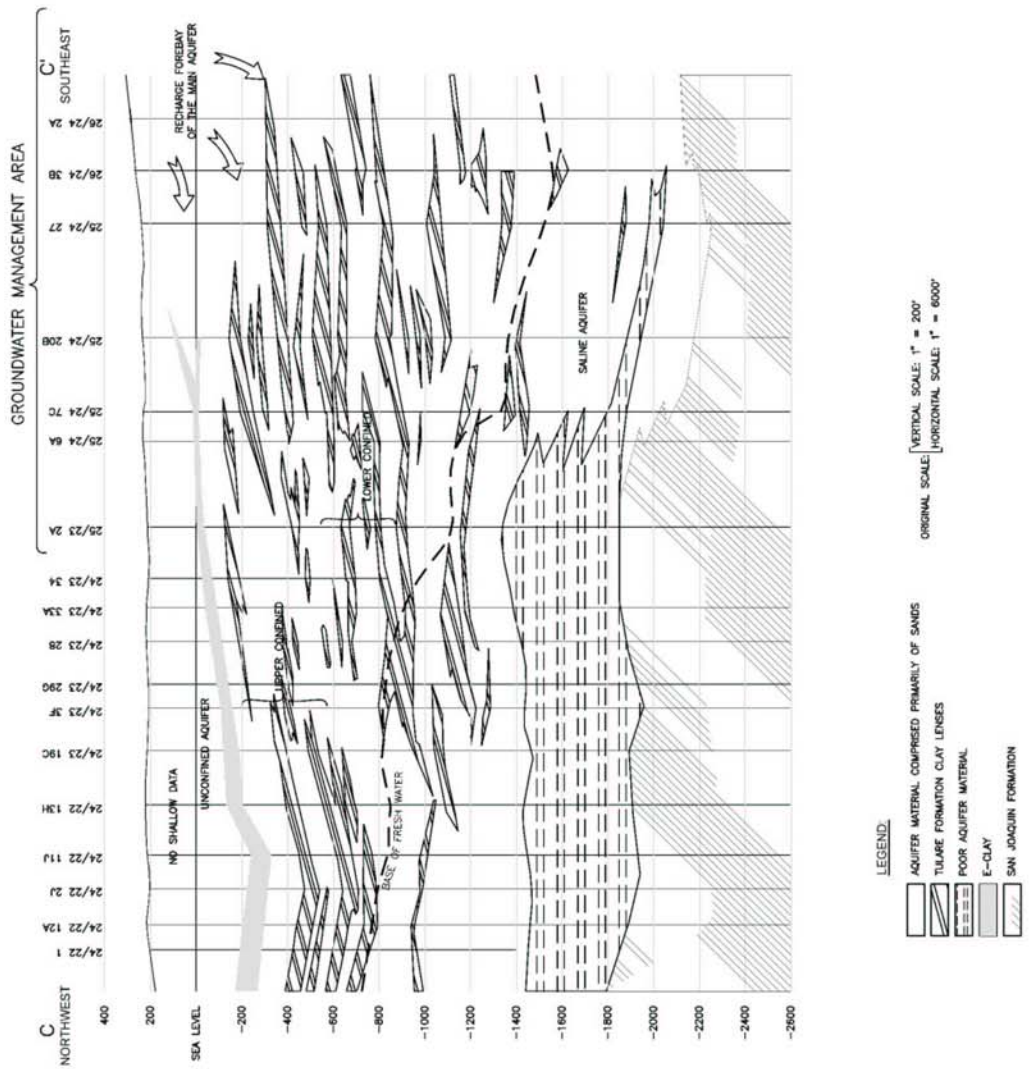
Navigant Consulting Inc.
SEMITROPIC WATER STORAGE DISTRICT
CROSS-SECTION B - B' THROUGH SEMITROPIC
WATER STORAGE DISTRICT



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SEMITROPIC WATER STORAGE DISTRICT

CROSS-SECTION C - C' THROUGH SEMITROPIC WATER STORAGE DISTRICT

(REFERENCE FIGURE 4 FOR

the main confined aquifer. This important hydraulic connection causes changes in water levels in the forebay and hydraulic head in the main aquifer to affect each other. Were it not for this hydraulic connection, the confined aquifer would receive little recharge.

Regionally, the unconfined aquifer thins to the east and south, and the lower zones thicken. The dip is generally west-northwest. In particular, to the south and east, the E-clay is absent and the entire aquifer consists of a thickened production zone, primarily Kern River Formation sediments. The upper portions are unconfined, the lower portions are semi-confined, and the base of fresh water drops to about 1,800 feet below the surface.

PERCHED ZONE

A 5-20 foot-deep, perched aquifer is located in the western part of the basin as shown on Figure 8 (i.e., the areas of shallow groundwater highlighted in color). The area affected by perched conditions changes yearly depending on hydrologic conditions. The extent of this zone in 2001 is shown on Figure 8, along with the electrical conductivity. Some perching may occur on the A-clay.

UNCONFINED ZONE

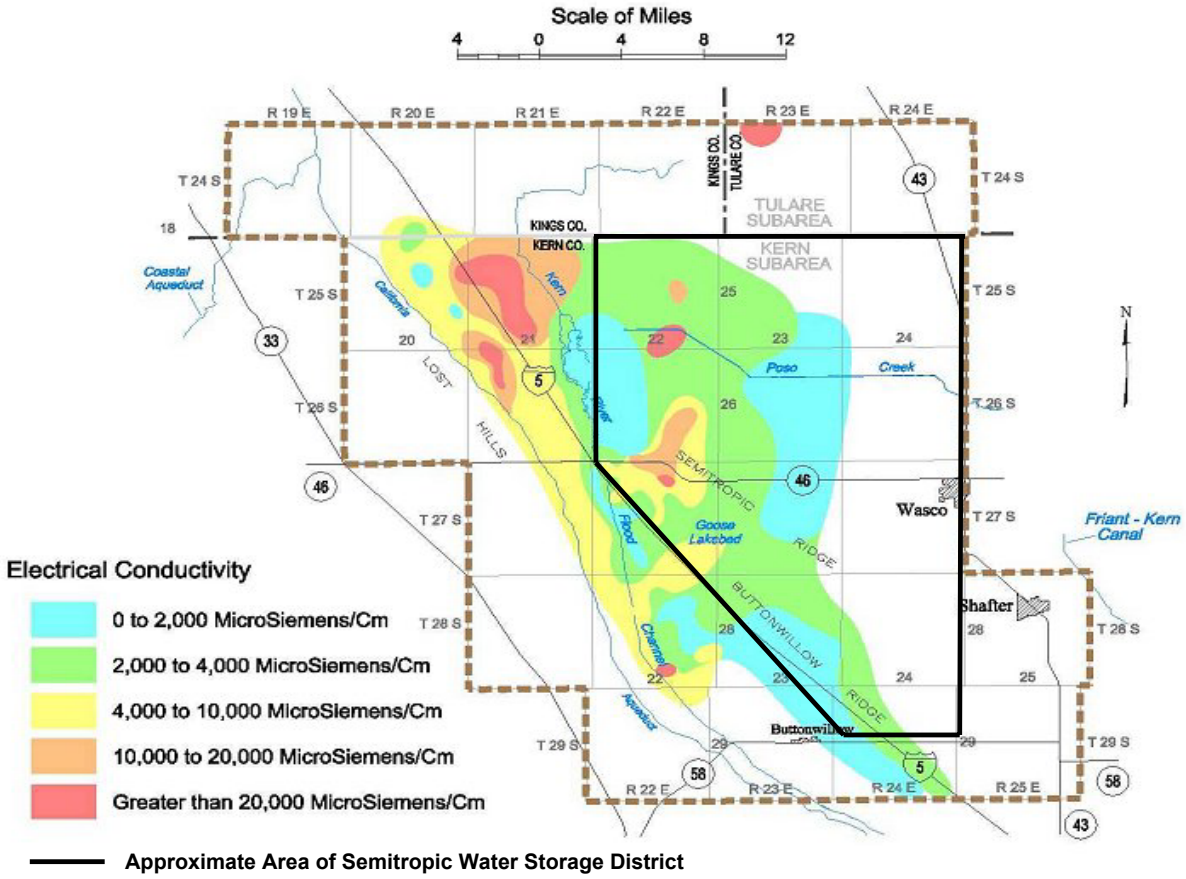
The upper, unconfined aquifer consists of poorer quality water and is not used by the District. The unconfined aquifer above the E-clay thickens with proximity to the Tulare Lakebed and is thin and indistinguishable from the sediments of the "main" aquifer in the forebay area.

PRODUCTION ZONE

Beneath the E-clay is the District's upper production zone of the "main" aquifer - a confined, fresh, sodium-bicarbonate aquifer. The approximately 325 feet of sediments of this layer have been oxidized to tan, yellow, olive-gray, and occasionally deep orange, indicating exposure to previous surface weathering. Most sand units are poorly to moderately well sorted sand, the coarsest size being small pebbles. The top and base sediments are thick, fining-upward sands with several discontinuous sands occurring between. The salinity is estimated at about 300 milligrams per liter (mg/l). There is a

Lost Hills/Semitropic

2001, Electrical Conductivity in Shallow Groundwater



Source: California Department of Water Resources, San Joaquin District

(http://www.dpla.water.ca.gov/sjd/waterquality/drainage/lost_ec01.jpg)

50-foot geochemical transition zone where oxidized sediments interfinger with reduced sediments. Below 800 feet, reduced blue-gray to blue-green sediments dominate, and the lowest part contains characteristically green-black sediments. A 100-foot-thick, coarse-grained sand forms the base of the production zone. Salinity in the lower production zone ranges from 150 to 250 mg/l.

TRANSITION ZONE

The next couple hundred feet of aquifer (between the production zone and the saline zone) acts as a buffer between the highly fresh water above and brackish water below and ranges from about 500 mg/l sodium bicarbonate water to about 2,000 mg/l chloride type water. Few wells within the District are constructed in this layer and it is not considered part of the "main aquifer". The depth to the base of fresh water varies significantly along the western edge of the District and is as high as a few hundred feet in some locations. An aquifer test was conducted in the northwest part of the District (reference Figure 4, "Testwell"), with monitors placed in the upper, lower, and transition zones. The test indicated that there is poor hydraulic connection between the transition layer and the main aquifer.

SALINE ZONE

An 800-foot thick sodium chloride saline aquifer underlies the transition zone. Below 1,250 feet, reduced black-green, coarse sediments dominate, and although the aquifer is hydraulically "good," the groundwater is saline. Salinity grades from about 3,500 mg/l to over 5,000 mg/l at 1,350 feet depth. Little is known of the salinity of the deeper regions.

RECHARGE

Replenishment of groundwater underlying the District occurs naturally as well as indirectly through the delivery of surface water, when available (also referred to as in-lieu recharge, i.e., delivery of surface water in lieu of groundwater pumping).

Recharge to both the confined and semi-confined aquifers beneath Semitropic occurs principally as subsurface inflow from the semi-confined aquifer forebay, located to the east of Semitropic. Recharge to the semi-confined aquifer system also includes deep

percolation of excess applied irrigation water, and, to a limited degree, percolation of Poso Creek surface flows which infrequently reach Semitropic. Deer Creek and the White River and the small drainages along the dissected hills also add a small amount of recharge to the valley aquifer. The importation of surface water to the forebay area has been ongoing for more than 30 years, and has totaled more than four million acre-feet for surface delivery. Additionally, irrigation water not consumed by evapotranspiration of cropped lands percolates to the underlying groundwater. Shallow clay layers, particularly in the northwest portion of Semitropic, restrict the percolation of surface water, and have formed areas of perched water.

The principal component of recharge in "dry" years is seepage from irrigation water, whereas, in "wet" years, intentional surface recharge and in-lieu recharge are the principal recharge components. It is important to note that natural recharge is becoming a significantly smaller portion of total recharge, as numerous groundwater recharge facilities and programs that have been developed throughout Kern County contribute significantly (today) to basin recharge. The District's management goals reflect their continuing role in enhancing recharge to the basin.

WATER LEVELS

Long-term records indicate that relatively stable groundwater conditions prevailed in the Semitropic area until the mid 1940s. Subsequently, increased pumping caused water levels to decline at a rate of about 8 feet per year, with seasonal fluctuations approaching 100 feet per year. These declines continued until initiation of surface water deliveries in the mid 1970s. The commencement of groundwater banking activities in the early 1990s further enhanced groundwater recharge, as discussed later herein. Figure 9 illustrates the water level fluctuations in selected wells, with some records extending back to 1950.

An elliptical, north-to-south low has formed along the basin axis beneath the District. Ridges of high groundwater levels are maintained east of the District and under the Kern River, however, these ridges appear to break down slightly in critically dry years. Groundwater levels have been relatively stable in recent years, with fluctuations of about 50 feet; declining during "dry" periods, and increasing during "wet" periods. Flow directions and current water levels are shown on Figure 10 (Spring 2002; Semitropic Groundwater Monitoring Committee).

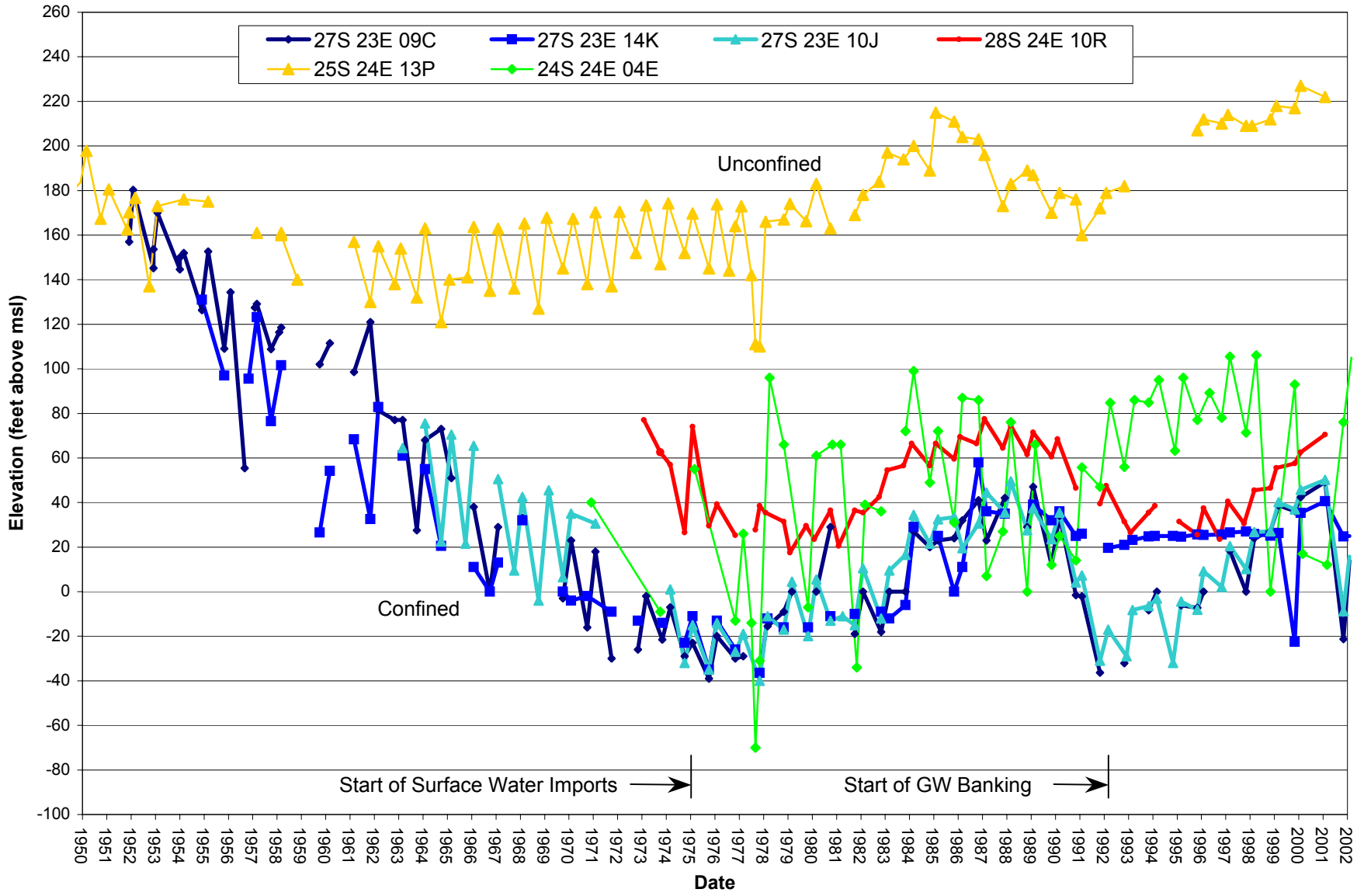


Figure 9 - Representative Hydrographs of Water Level Fluctuations in Wells

WATER QUALITY

The main production zones beneath the District are of good water quality; however, three areas of potentially poor quality are found within the District and the groundwater basin; shallow groundwater, deep groundwater, and west-side groundwater. The salinity profile shown in Figure 11, is for the "test well" located in the northwest portion of the District, as shown in Figure 4 (T25S, R22E). The profile illustrates the perched and deep groundwater quality at that location. The high salinity shallow groundwater is only characteristic where there is perched water; however, the transition zone and saline water below the production zone are typical of the entire District. Prevention of migration from the poor quality areas to the high quality areas is a critical management goal of the District.

Groundwater of poor quality, typically a sodium chloride or sodium chloride-sulfate type with high concentrations of dissolved solids and chlorides, can be found extensively along the west side of the San Joaquin Valley. "Stabilization" of groundwater levels beneath most of the District has served to limit migration of poor quality groundwater into the District from the west.

Groundwater of poor quality also can be found in the unconfined aquifer, particularly where there is perched water. Figure 12 shows the areal distribution of total dissolved solids concentrations in the unconfined or shallow zone. Some areas of the unconfined aquifer are significantly saline, others brackish, due to "spills" from the perched zone, leakage through domestic well borings, and deep seepage of irrigation water. The E-clay largely prevents this water from entering the main aquifer. Accurate identification of the E-clay, proper and sufficient length of annular seals through the E-clay, and proper materials and methods of well construction are critical to maintaining good water quality in the main aquifer. Figure 13 illustrates the areal distribution of total dissolved solids concentrations in the main or deep zone.

Groundwater of poor quality also can be found in the main aquifer, particularly the deeper zones of the Tulare Formation. The depth to the base of fresh water varies significantly across the District. Pockets of connate saline water may also be trapped in shallower zones under the Buttonwillow and Semitropic ridges. The District has reviewed extensive geologic data so that District wells are constructed sufficiently above the saline boundary to maintain water quality.

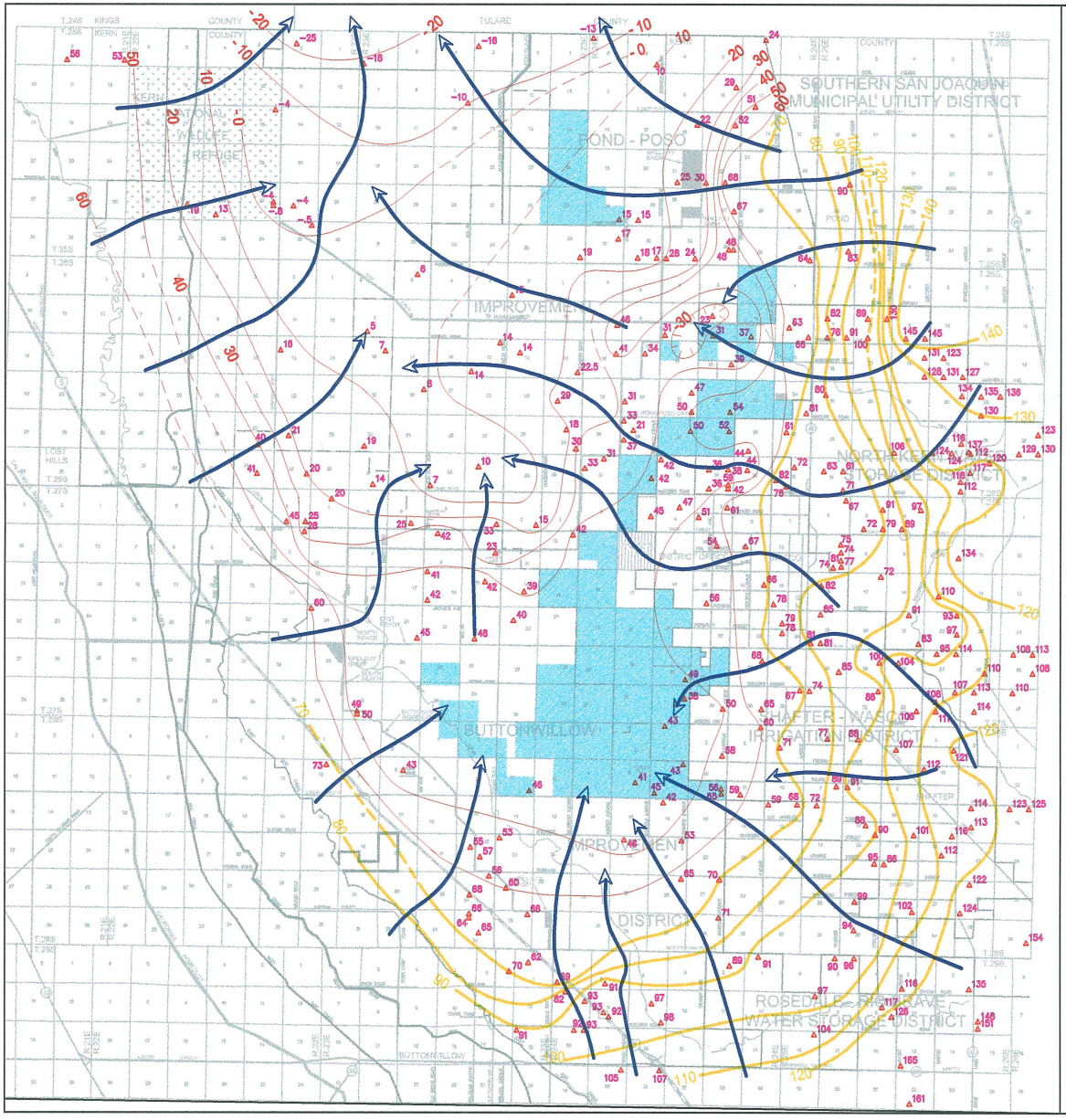


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Figure No. 10

FIGURE
WATER-LEVEL ELEVATIONS AND
DIRECTION OF GROUNDWATER FLOW IN FOREBAY
AREA AND LOWER ZONE
SPRING 2002

EXPLANATION

- 50 — Well and water level elevation
- direction of groundwater flow
- 160 — Water elevation contours (ft. above M.S.L.) in forebay area.
- 30 — Water elevation contours (ft. above M.S.L.) in lower zone.

SEMITROPIC WATER STORAGE DISTRICT

SCALE OF MILES
1 0 1 2 3

file:swsd_lower zone spring 2002.dwg rra/22apr03

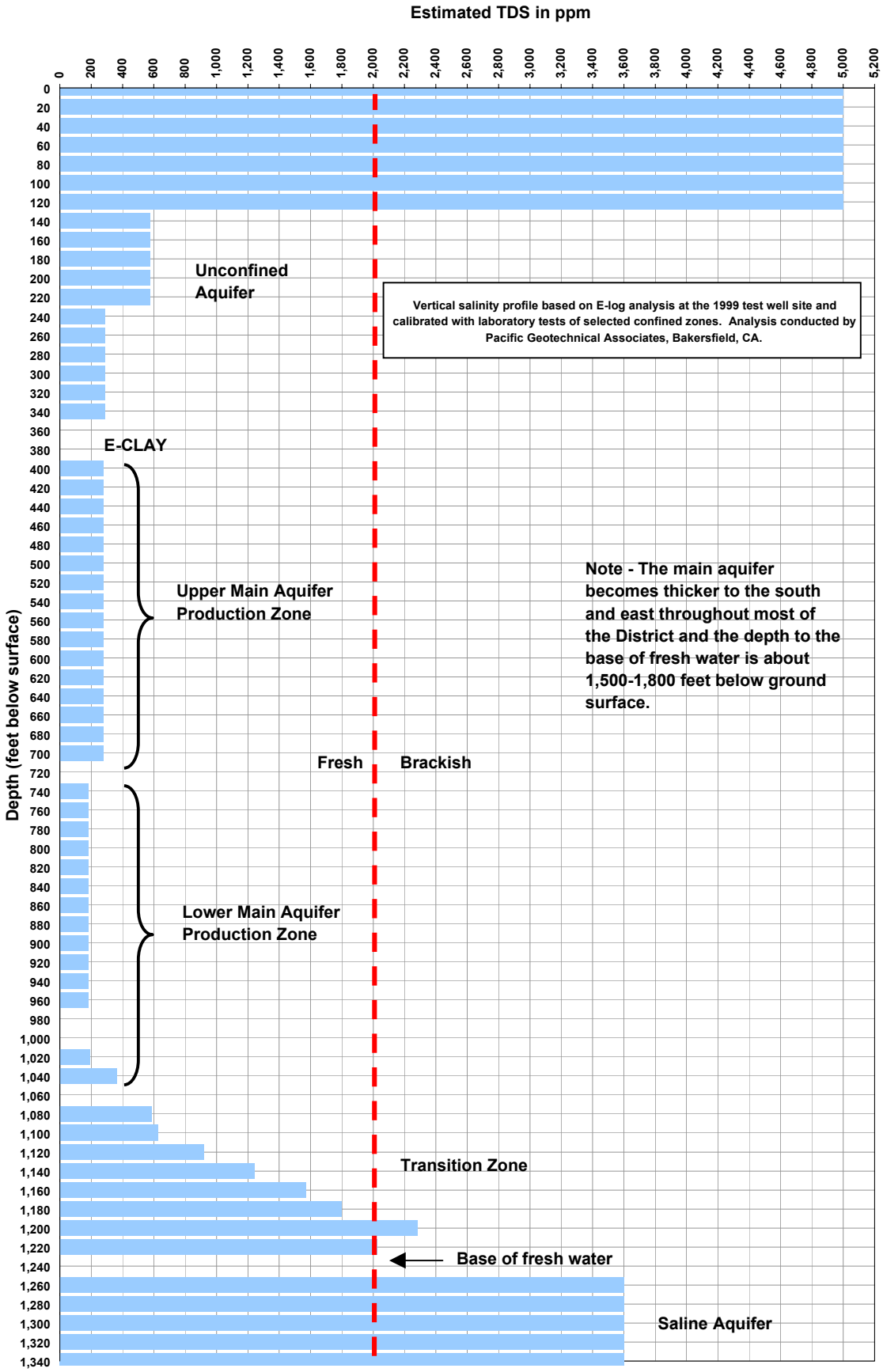
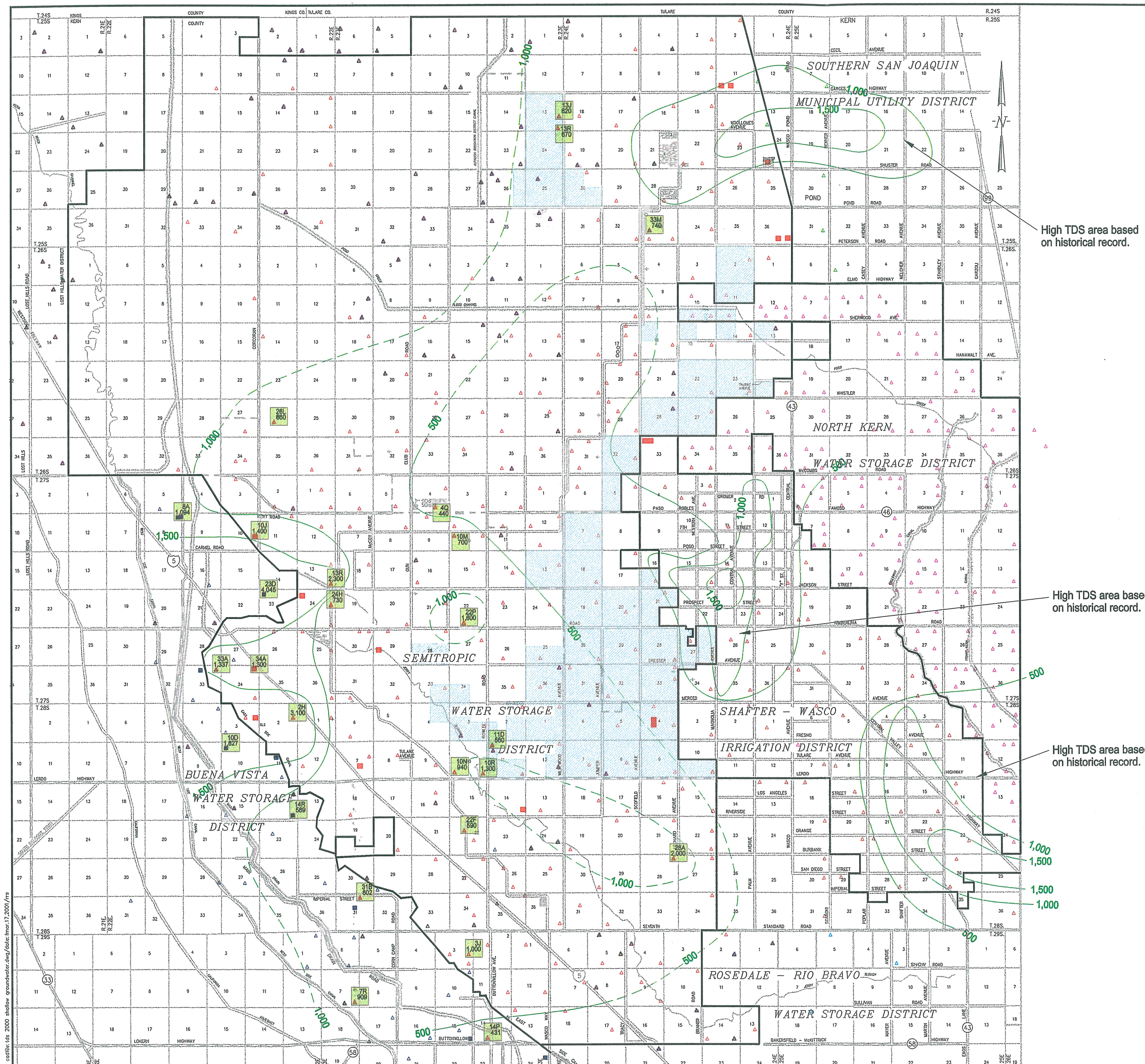


Figure 11 - Salinity Profile in Semitropic Test Well (T25S R22E Sec 35)

Figure No. 12



TOTAL DISSOLVED SOLIDS IN SHALLOW GROUNDWATER
APRIL-SEPTEMBER, 2000

EXPLANATION

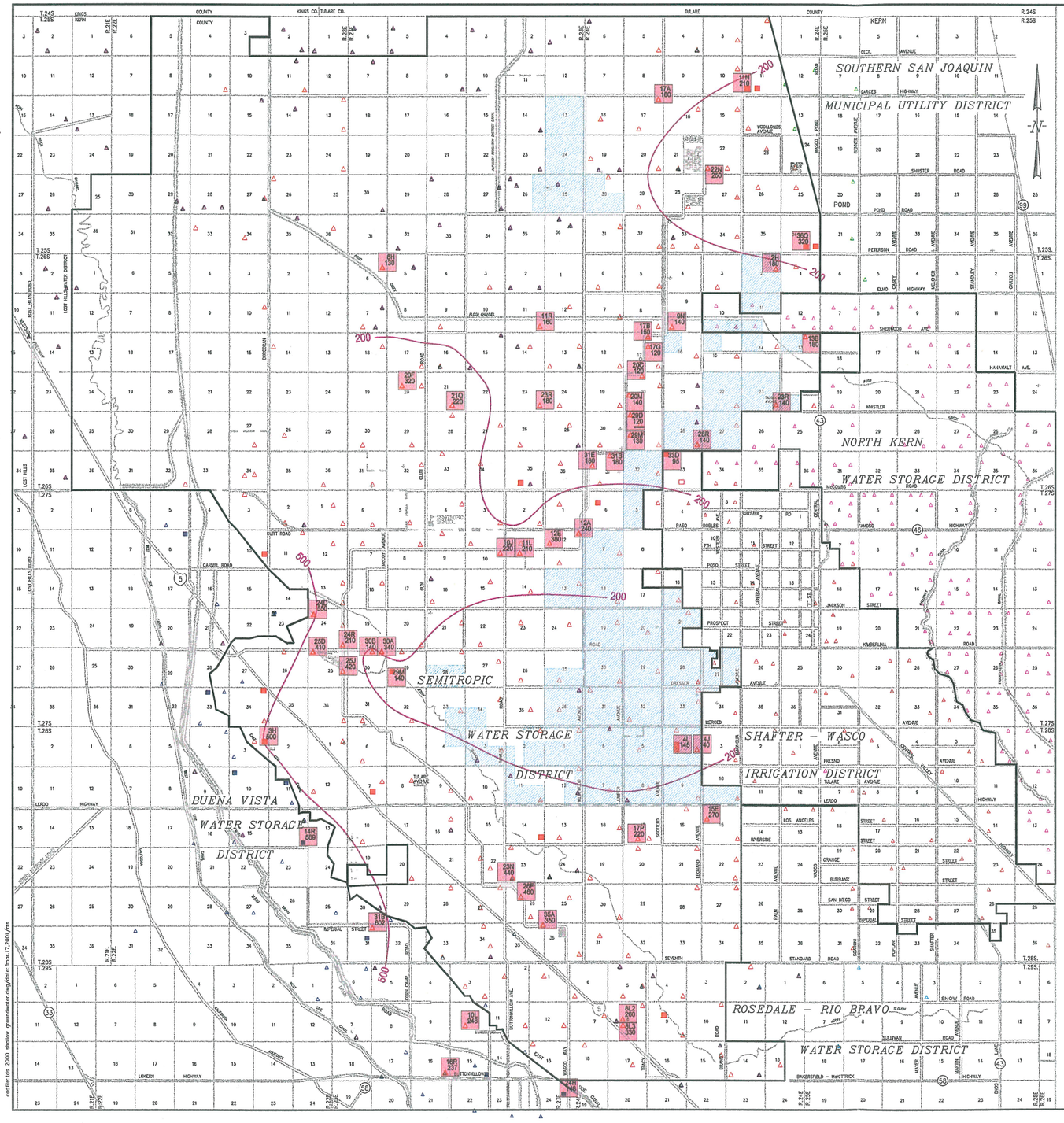
3J / 1,300 — WELL IDENTIFICATION AND TDS CONCENTRATION (mg/l)

CONTOUR OF TDS CONCENTRATION (mg/l)

SCALE OF MILES

1 0 1 2 3

FIGURE No.13



TOTAL DISSOLVED SOLIDS IN DEEP GROUNDWATER APRIL-SEPTEMBER, 2000

EXPLANATION

- 3J 220 — WELL IDENTIFICATION AND TDS CONCENTRATION (mg/l)
- CONTOUR OF TDS CONCENTRATION (mg/l)

SCALE OF MILES

1 0 1 2 3

cadfile: tds 2000 shallow groundwater.dwg/cala: fmw 17 2001 /rs

SURFACE WATER SUPPLIES AND DEMAND

Groundwater management within the District, as in most of California, is rooted in the conjunctive use of surface water and groundwater resources, that is, water supplies from the two sources are integrated to accomplish optimum utilization of each. In the 1960s, District landowners approved implementation of a project, which included construction of main conveyance and distribution system facilities extending from the California Aqueduct (Governor Edmund G. Brown California Aqueduct) of the State Water Project (SWP) to farm delivery locations. The Project was predicated on the conjunctive use of imported SWP water with the underlying groundwater resource. Prior to construction of the facilities, irrigated crops within Semitropic were totally dependent on groundwater pumping. Since the imported water supply is erratic, the District devised a plan of conjunctive use, wherein the underlying groundwater reservoir continues to be used to meet demands for seasonal peaks and to provide irrigation water in times of limited surface supplies. Under the District's Project, some lands received the imported water supply (the so-called Contract Water Service Area) and other lands remained solely dependent on pumped groundwater for irrigation.

Semitropic initially contracted with the Kern County Water Agency (KCWA) for an annual entitlement of 158,000 acre-feet of SWP water, which was subsequently reduced to 155,000 acre-feet in 1996. This is used to irrigate approximately 43,000 acres in its Contract Water Service Area (CWSA). Additional SWP supplies are available from time to time and are delivered to the CWSA and to a Temporary Water Service Area (TWSA) of about 29,000 acres. The total demand for irrigation water is on the order of 450,000 acre-feet each year. Any demand not met with imported supplies is met with pumped groundwater. The District's current annual delivery capability is about 320,000 acre-feet and the ultimate objective is on the order of 400,000 are-feet. Farmers in the CWSA and TWSA maintain wells to supplement District deliveries and protect against shortages in the imported water supply. The Semitropic Groundwater Banking Project, implementation of which commenced in 1994, provides an intermittent supply of surface water to an additional 23,000, acres bringing the total area to which surface water can be delivered to about 95,000 acres. The remaining area of the District includes about 43,000 acres which rely exclusively on groundwater, and about 83,000 acres which are not farmed. Figure 14 shows the lands developed to irrigated agricultural uses within the District (i.e., all lands which are colored on the Figure).

Contract supplies have been supplemented from time to time by other available water supplies, including Poso Creek, Central Valley Project (CVP) water, and local Kern River water. District landowners have conjunctively utilized imported surface water supplies with groundwater since completion of the District's original irrigation distribution system facilities in the mid 1970s.

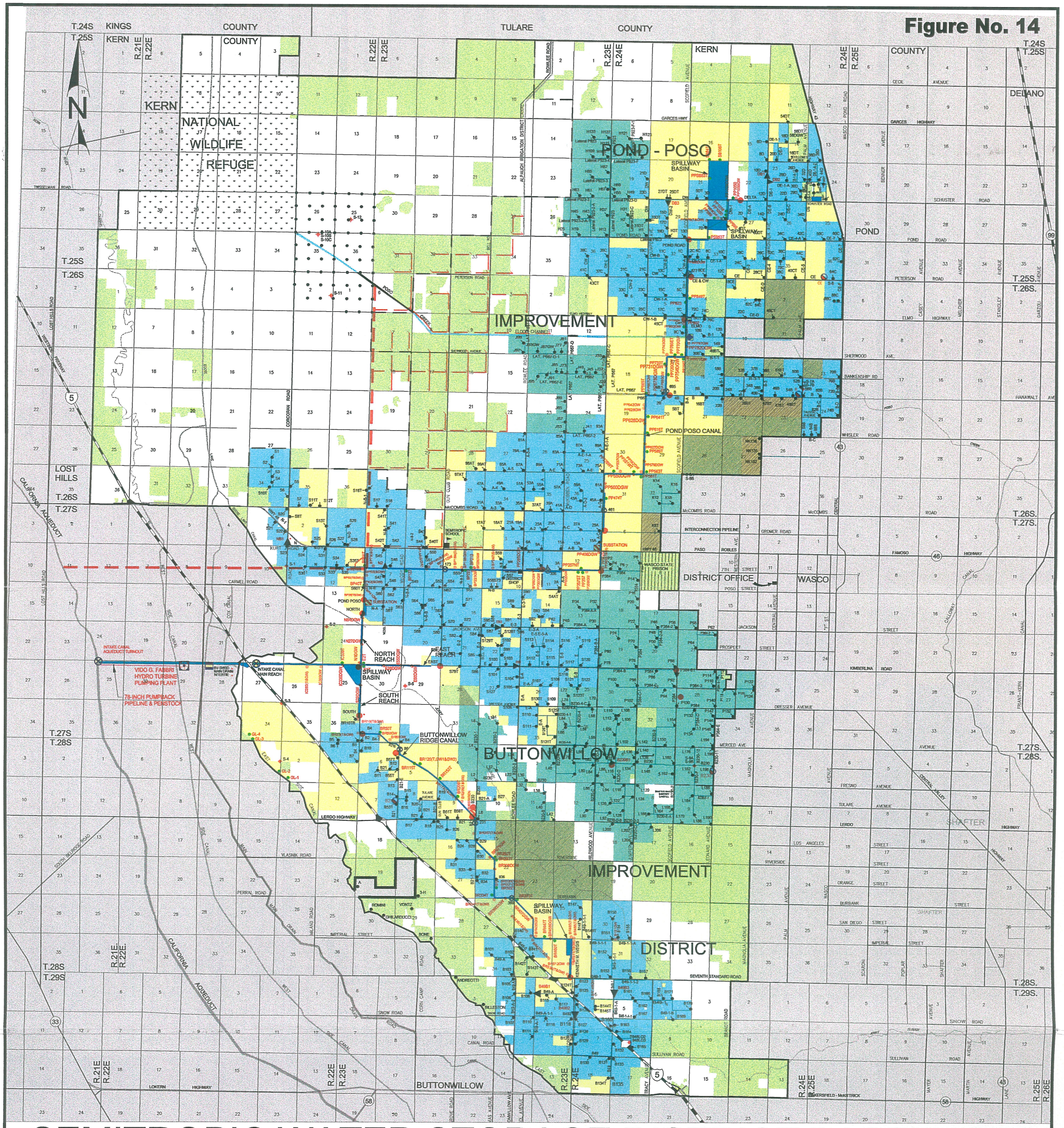
Figure 14 shows the District's irrigation distribution system. Under the subject Plan, the District's objective is to expand its surface water distribution system in order to further reduce groundwater pumping in "wet" years. In addition, the District will seek to preserve and protect the contracts respecting its existing surface water supplies, and will continue to pursue opportunities to supplement these supplies. Additional opportunities could include "spot" purchases of available surface supplies (which is the District's current practice), increasing the District's ability to import water during the wetter years (through institutional arrangements and/or construction of additional facilities), expanding the District's existing irrigation distribution system to include lands which rely principally on pumped groundwater, and acquisition of additional water supplies on a permanent or long-term basis, if and when available.

In cooperation with the Shafter-Wasco Irrigation District (Shafter-Wasco), Semitropic has constructed the Interconnection Pipeline and Pumping Plant for exchange of water supplies between the two Districts. As shown on Figure 3, Shafter-Wasco is one of Semitropic's immediate neighbors to the east. The facility aids both districts in the delivery of additional supplies and the balancing of existing supplies. In this regard, it is noted that Shafter-Wasco, as a CVP-Friant contractor, relies on a different watershed for its imported water supply. Frequently, there are some differences in hydrology between the SWP and the CVP (Friant). These differences create opportunities for mutually beneficial exchanges based on use of this interconnection between the distribution systems of the two districts.

CONJUNCTIVE USE OF SURFACE WATER AND GROUNDWATER

As discussed previously, a major component of the District's groundwater management is the conjunctive use of surface water and groundwater supplies; integrating the two sources of supply to achieve the optimal use of each. The District's conjunctive use program reflects available facilities (for distribution, recharge, and recovery), groundwater basin characteristics, the availability of surface water supplies, and

Figure No. 14



SEMITROPIC WATER STORAGE DISTRICT BASEMAP

CONTRACT SURFACE WATER SERVICE AREA	42,503.65
OPERATIONAL IN-LIEU SERVICE AREA	23,676.66
FUTURE IN-LIEU SERVICE AREA	5,950.90
CONJUNCTIVE SURFACE WATER/ GROUND WATER SERVICE AREA UNDER IN-LIEU SERVICE AREA	1,276.56
CONJUNCTIVE SURFACE WATER/ GROUND WATER SERVICE AREA	27,167.11
GROUND WATER SERVICE AREA	42,149.72
TOTAL IRRIGATED ACREAGE	142,724.60
SPREADING EMERGENCY SPILL BASIN	

LEGEND

- SEMITROPIC WATER STORAGE DISTRICT BOUNDARY.
- IMPROVEMENT DISTRICT BOUNDARY.
- CANAL SYSTEM.

FEBRUARY 2003

SCALE IN MILES

1 0 1 2 3

- DISTRICT SUBSTATION
- TURNOUT
- GW METER & CANAL PUMPS LOCATION
- DISTRICT WELL LOCATION
- BOOSTER PLANT
- IN-CANAL PUMP
- MONITOR WELL
- LATERAL — PIPELINE LATERAL
- LATERAL — FUTURE PIPELINE LATERAL
- PROPOSED WELLS SITE
- PUMPING PLANT
- REMOTE STAND PIPE
- NATURAL GAS ENGINE GENERATOR
- VIDO G. FABBRI HYDRO TURBINE PUMP BACK PUMPING PLANT
- WATER LEVEL CONTROL STRUCTURE RADIAL GATE WITH REVERSE FLOW PUMPS
- WATER LEVEL CONTROL STRUCTURE SLIDE GATE DIVERSION
- WATER LEVEL CONTROL STRUCTURE STOP LOG WEIR

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institutional considerations. The District's conjunctive use program includes surface delivery in lieu of groundwater pumping, groundwater storage and recovery (banking) for other agencies, as well as exchange arrangements. Further, it depends on available groundwater storage capacity to regulate "wet-year" surface water supplies to "dry" years when that water is necessary to supplement deficiencies in surface supplies.

ACCOMPLISHMENTS

Surface delivery in lieu of groundwater pumping motivated the District to enter into long-term contracts for SWP water in the early 1970s. Deliveries made in this manner are referred to as "indirect" or "in-lieu" recharge. This aspect of the District's program relies on its extensive system of irrigation distribution facilities (constructed specifically for the purpose of delivering the SWP water). In this regard, Semitropic has expanded its delivery capability from about one-third of the irrigated acreage (in the late 1970s) to about two-thirds at present (with plans to increase to about 90 percent of the irrigated area). In addition, the District banks water outside of its immediate (or Management) area through its participation in the Kern Water Bank and the Pioneer Project (both of these water banking projects are located on the Kern River fan). These projects rely on direct recharge and will be used as an additional source of supply in "dry" years.

Semitropic has implemented various measures over the years to promote (in-lieu) recharge, reduce overdraft, and to ameliorate the consequences of water supply deficiencies of the SWP. These measures have included:

- Temporary water-service connections (to deliver non-contract surface water, when available, in lieu of pumped groundwater).
- Water-pricing initiatives (which make the use of available surface water supplies competitive with the cost to pump groundwater).
- Connection of landowner wells to the District's main conveyance system (which allow the District to maximize the import of available surface
- water supplies early in the year by providing the ability to meet water delivery obligations to the Contract Water Service Area later in the year).

- Interconnection of facilities with Shafter-Wasco Irrigation District and Buena Vista Water Storage District (to facilitate mutually beneficial water banking and exchange arrangements with neighboring water districts).

- Purchase and importation of available water supplies (over and above the District's SWP contract water).

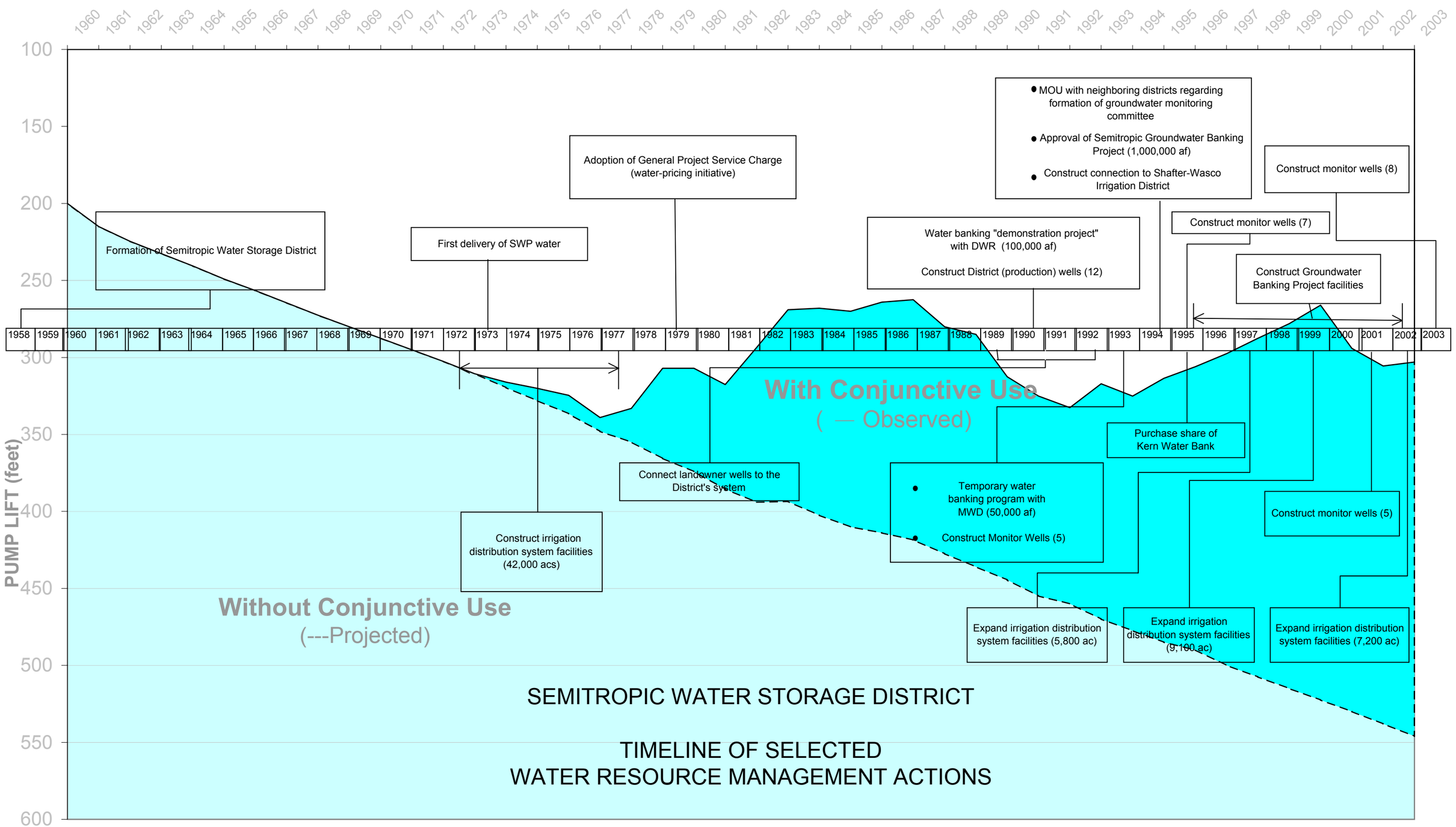
- Implementation of the Semitropic Groundwater Banking Project to, among other matters, increase the District's ability to purchase and import available water supplies (i.e., when facilities not in use for banking, District can use for its own purposes, giving it more absorptive capability; and banking revenue can be used to purchase water supplies). (Groundwater banking is further described below.)

These and other conjunctive-use measures and actions are illustrated on the timeline presented on Figure 15, along with average pumping lifts in the District.

FUTURE ACTIVITIES

Under the Management Plan, the District will seek to preserve and enhance its extensive conjunctive-use activities (as outlined above). Enhancement of conjunctive-use activities will include pursuing an expansion of its Groundwater Banking Project. The expansion would provide for the construction of additional main conveyance and distribution facilities, which would increase the District's capability to take advantage of waters of "opportunity" (when the facilities are not in use to satisfy water-banking obligations). This expansion is referred to as the Stored Water Recovery Unit, and a brochure describing this new unit and its potential accomplishments is included in Appendix 7.

FIGURE 15



SEMITROPIC WATER STORAGE DISTRICT

TIMELINE OF SELECTED
WATER RESOURCE MANAGEMENT ACTIONS

GROUNDWATER BANKING PROJECT

In 1988 Semitropic initiated a study of a groundwater banking program which was ultimately included as a part of the District's 1992 Improvements Project. This has developed into the Semitropic Groundwater Banking Project, which is a long-term water storage project designed to optimize the distribution and use of water resources between the District and its banking partners.

The original District projects were planned and designed to deliver supplemental surface water to farms relying exclusively on groundwater. Imported surface water from the SWP and the associated reduction in groundwater pumping have helped to stabilize groundwater conditions in Semitropic, which in turn have helped maintain a viable agricultural economy in the area. The Groundwater Banking Project is a continuation of Semitropic's efforts to make the best use of the underlying groundwater resource, including unused storage capacity.

Semitropic has signed agreements with water banking partners**;** including the Metropolitan Water District of Southern California, Santa Clara Valley Water District, Zone 7 Water Agency**,** Alameda County Water District, Newhall Land and Farming Company, and Layne Water Development and Storage as part of the Semitropic Groundwater Banking Project. Semitropic receives SWP or CVP surface water from its banking partners in years of ample supplies and delivers it to landowners for irrigation use in lieu of groundwater pumping. Groundwater which otherwise would have been pumped remains in storage, credited to the account of the banking partner. In times of surface water shortages, the water may be withdrawn by the banking partner. At that time, Semitropic will return the banked water to the California Aqueduct, either from its supply of SWP water, and/or by pumping of District and landowner wells. The objectives of the project are to mitigate groundwater overdraft, reduce District water costs, and to enable greater flexibility in District operations. At the end of 2002, the District held more than 650,000 acre-feet in groundwater storage on behalf of its banking partners. This storage has a significant, positive impact on groundwater levels.

Certain operational criteria have been put in place to assure that District landowners and landowners in neighboring districts are not adversely impacted as a result of the Project; these include the following:

(1) Only water stored under the banking agreement may be withdrawn from Semitropic's groundwater basin. Water must first be stored before it is withdrawn.

(2) Semitropic will retain a minimum quantity of its SWP supply to maintain the quality of water delivered to farmers within its service area.

(3) The District will retain about ten percent of the water delivered. to account for aquifer and operational losses.

(4) The District will not pump more water from the wells on a given farm than the total of all prior surface water deliveries to that farm for banking purposes.

(5) A network of new monitor wells, solely for monitoring purposes, is being constructed to supplement the network of production wells.

(6) Withdrawal of stored water would be prohibited if such withdrawals would cause the average groundwater levels over a three-year period to be 15 feet lower than the average groundwater levels which would have prevailed without the project over the same three-year period.

(7) Groundwater levels are reviewed by a Monitoring Committee composed primarily of representatives from surrounding water districts.

As part of the Project, the District is constructing additional distribution facilities, new wells for recovery of stored groundwater, and facilities to transfer water back to the California Aqueduct. In particular, distribution facilities have been built to serve intermittent surface water supplies (for groundwater banking) to more than 23,000 acres.

In addition to the water banking aspects of the Project, distribution facilities which are being constructed as part of the Project can be used for non-banking purposes. In particular, these facilities will allow Semitropic to acquire KCWA Agricultural Pool Water, when available, and deliver it to District lands. The water banking facilities will also allow the District to pump groundwater and deliver it for the

benefit of farmers within Semitropic. The District will be able to provide water to farmers who may have groundwater quality problems, peaking problems, well outages, and other emergency needs.

CONSERVATION

The District's Project and operations are based on regulating or conserving "wet-year" water for use during "dry" years. In addition, the District's conservation practices are evidenced in its water pricing policy and in its financial support of water use education, e.g., the Pond-Shafter-Wasco RCD-DWR Mobile Laboratory, the Water Association of Kern County (at the local level), and the Water Education Foundation (at the State level). The District practices conservation in its operations and encourages and supports conservation at the on-farm level.

MANAGEMENT OF GROUNDWATER EXTRACTIONS

Effective groundwater replenishment necessarily involves both the management of water supply to the basin and, in some cases, the management of the extractions from that basin. Management of groundwater extractions can be achieved through economic inducement policies. Management of groundwater extractions should also reflect consideration of water conservation, and protection of the quality of water. The District provides an indirect economic inducement through its water-pricing policies. In particular, surface water rates are set high enough to promote water conservation, yet reasonable enough to compete with groundwater pumping costs, and thereby discourage the use of groundwater when surface water is available. In addition, it is the District's policy to not allow use of the District's distribution facilities for the wheeling of groundwater when there are water supplies available to turn off wells.

Extractions within the District area are by privately-owned wells and District-owned wells. Approximately two-thirds of the District's irrigated area is partially dependent on surface water from the District for its irrigation water supply. Landowners must maintain wells to meet irrigation demands when surface water supplies are limited or not available. The District maintains wells to supplement the available surface supply to some District lands and for recovery of stored groundwater for return (to banking partners) in years of reduced surface water supplies. The remaining one-third of the

District's irrigated area relies exclusively on pumped groundwater. The District's importation of surface water helps to support those landowners who continue to rely on pumped groundwater by reducing the District's overall reliance on the underlying groundwater.

REGIONAL AGENCY INVOLVEMENT

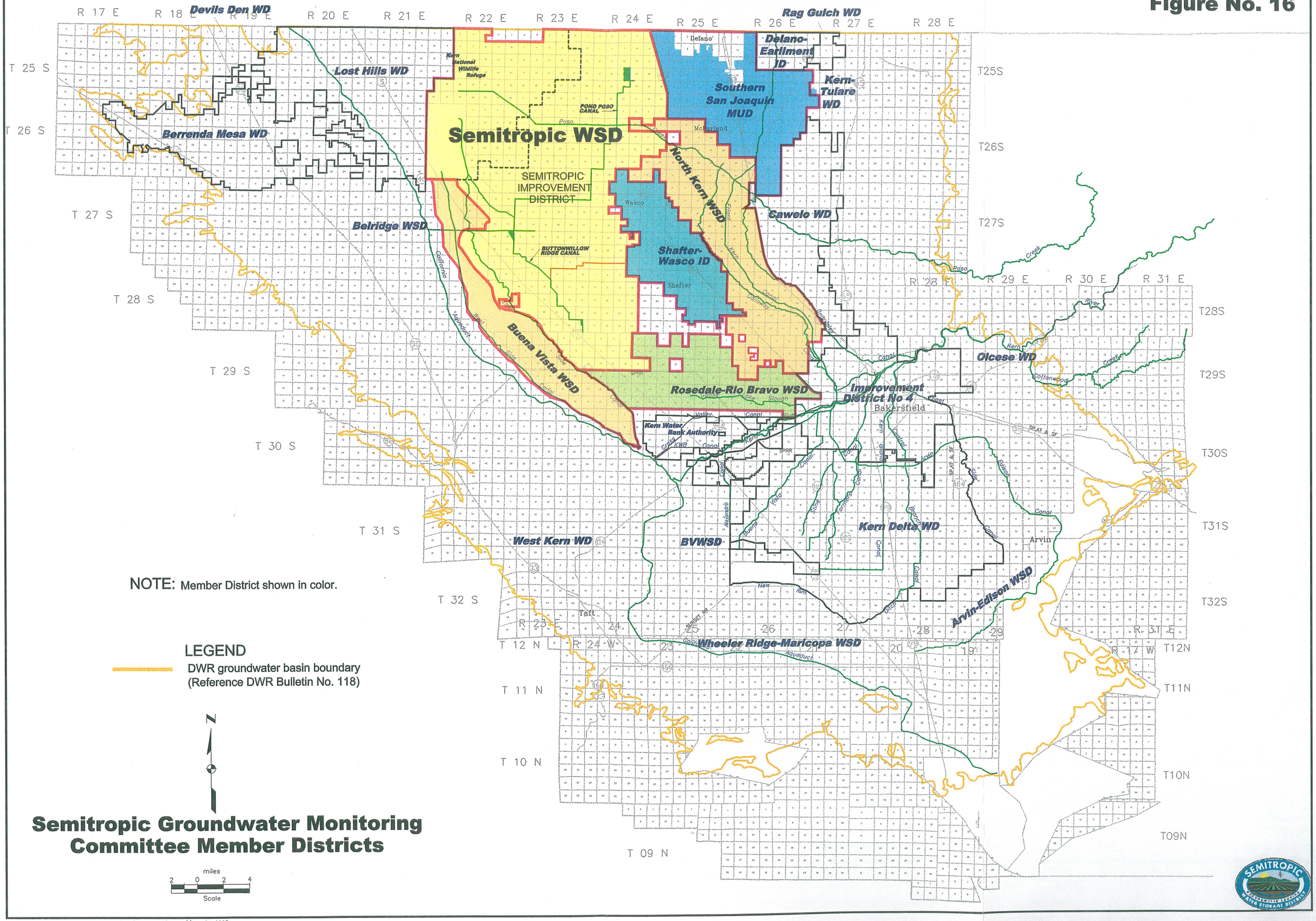
Institutional considerations respecting the Management Area include the Semitropic Groundwater Monitoring Committee, the Kern County Water Agency, and the County of Kern. Each of these is briefly discussed in the sections which follow.

SEMITROPIC GROUNDWATER MONITORING COMMITTEE

The Southern San Joaquin Municipal Utility District, the North Kern Water Storage District, and the Shafter-Wasco Irrigation District are positioned to the east of Semitropic. The Rosedale-Rio Bravo Water Storage District adjoins on the southeast and the Buena Vista Water Storage District is to the west, all with conjunctive-use projects of their own. The District and its neighbors (shown on Figure 3) share a common groundwater basin. For this reason, a groundwater monitoring committee was formed in 1994 in response to implementation of the Semitropic Groundwater Banking Project (Memorandum of Understanding included as Appendix 1). This committee includes representatives from Semitropic and five neighboring water agencies; Buena Vista Water Storage District, Rosedale-Rio Bravo Water Storage District, Shafter-Wasco Irrigation District, North Kern Water Storage District, and Southern San Joaquin Municipal Utility District (as shown on Figure 16). It is noteworthy that the committee includes users of State Water Project water, federal Central Valley Project water, and local Kern River water. The responsibilities of the committee are identified in the Memorandum of Understanding and are reproduced following:

- Engage the services of suitable professional groundwater specialist who shall, at the direction of the Committee, provide assistance in the performance of the tasks identified in sections 3(a)(3) through 3(a)(8) below;
- Meet and confer monthly or at other intervals deemed to be appropriate in furtherance of the monitoring program;

Figure No. 16



NOTE: Member District shown in color.

LEGEND

DWR groundwater basin boundary
(Reference DWR Bulletin No. 118)

N

Semitropic Groundwater Monitoring Committee Member Districts

miles
2 0 2 4
Scale

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- Establish a groundwater evaluation methodology; or methodologies;
- Specify such additional monitoring wells and ancillary equipment as are deemed to be necessary or desirable for the purposes hereof, subject to 3(c)(1) below;
- Prepare annual water balance studies and other interpretive studies, which will designate all sources of water and the use thereof within the study area;
- Develop criteria for determining the conditions constituting a significant imbalance (as such term is used in Paragraph 4 hereof) between the delivery of water for banking and/or nonbanking purposes and withdrawal for such purposes;
- Determine the impacts of the Project on each of the Parties by evaluating with and without Project conditions; and
- Develop procedures, review data, and recommend Project operational criteria for the purpose of identifying, verifying, avoiding, eliminating or mitigating to the extent practical, the creation of significant imbalances or significant adverse impacts including, but not limited to, the 15-foot, three-year rule, all as provided further at paragraphs 4, 5 and 6 below.

The Committee has been meeting as necessary since its inception in 1994. Kenneth D. Schmidt and Associates serves as consultant to the Committee and has been responsible for preparation of a monitoring report. The biennial report for 2001 and 2002 is in draft form; accordingly, the report for 1999 and 2000 has been included as Appendix 8. The Committee's consultant also provides guidance on the location and construction of monitor wells, including the most recent eight monitor wells (completed in 2003).

KERN COUNTY WATER AGENCY

Semitropic is a "member unit" of the Kern County Water Agency (KCWA), with whom Semitropic contracts for the importation of State Water Project water. Semitropic cooperates with KCWA in preserving and protecting surface water and groundwater in the basin. Kern County Water Agency was created by special act in 1961 (a copy of the Act is included as Appendix 4) and has boundaries which are coincident with the County of Kern. Appendix 5 includes a comparison (prepared by KCWA) of AB-3030 provisions with provisions of the KCWA Act. KCWA activities include maintenance of water level, water quality, and well construction databases; periodic collection of

selected water level measurements and water samples; technical review of the need for annular seals in new wells; and occasional participation in meetings of the Semitropic Groundwater Monitoring Committee.

COUNTY OF KERN

In May of 1989, the Kern County Board of Supervisors adopted Ordinance No. G-5006 concerning the regulation of wells and water systems (copy of Ordinance attached as Appendix 6). The Ordinance adopted, by reference, certain standards contained in California State Department of Water Resources Bulletin No. 74-81, and Kern Health Department Handbook "UT 50." This Ordinance governs the construction and reconstruction of wells, including protection of the well head, casing standards and seals between aquifers, as well as procedures to be followed upon abandonment, and is applicable to wells throughout the District and Kern County. Semitropic participates in the Water Resources Committee of Kern County, which is advisory to the Kern County Board of Supervisors. Finally, when requested by agencies of Kern County, the District reviews development plans and proposals within its boundaries.

BASIN MANAGEMENT OBJECTIVES

Plan objectives have been developed for the Management Area and are listed following:

- Maintain groundwater levels at economically viable pumping lifts for the agricultural uses (economy) of the area.
- Control degradation of groundwater quality and enhance quality where practicable.
- Limit inelastic subsidence.
- Preserve the historical flow of Poso Creek into the area.
- Operate groundwater banking program to benefit District landowners, without adversely affecting water supplies of any District landowners or landowners in neighboring districts.

These are the fundamental basin management objectives which will guide the District's decision making, to the extent practicable and economically feasible. Specific management actions, practices, and policies which are applicable to the Management Area are discussed below for each of the management objectives.

Maintain groundwater levels at economically viable pumping lifts for the agricultural uses (economy) of the area.

- Preserve the yield of the District's contract for imported State Water Project water (through participation in the efforts of the Kern County Water Agency and the State Water Contractors to monitor SWP operations).

- Support measures that will improve the reliability of the SWP (to the extent that it is economically feasible for agriculture).

- Purchase and import "Article 21" water, as available from the State Water Project.

- Purchase and import additional SWP water which is available from time to time (on an annual basis) through the Kern County Water Agency (KCWA). In this regard, support KCWA efforts to keep SWP entitlement within Kern County and available at a price affordable to potential buyers, such as the District.

- Continue to support and develop the District's water banking capabilities within the Management Area.

- Continue to support the development of in-lieu recharge projects within the groundwater management area, i.e., to accommodate the delivery and use of available surface water supplies in lieu of pumped groundwater, including expansion of main conveyance facilities to and from the California Aqueduct, as well as irrigation distribution system facilities.

- Participate in water banking projects located outside of the District's area as an additional means of regulating water supplies available to the District. [The District is limited in its ability to take surface water which may become available either late in the year or early in the year, since (owing to geology) in-lieu recharge is the primary means of recharge (which limits the District's

absorptive capability to the relatively "low" irrigation demands of these times of the year). Accordingly, among other matters, participation in direct recharge banking projects outside of its area provide a place to store water which is independent of irrigation demand.]

- Facilitate the importation of surface water supplies to neighboring water agencies relying on the common groundwater resource.

- Encourage the use of surface water (in lieu of pumped groundwater) when available (e.g., through water-pricing policies and contracts for intermittent water deliveries).

Control degradation of groundwater quality and enhance quality where practicable.

- Maintain groundwater levels such that the movement of relatively higher TDS groundwater (lying to the west) is mitigated. This would involve maintaining groundwater levels through the actions summarized for the first basin management objective.

- Construct a sanitary well seal, in accordance with Kern County Ordinance No. G-5006, on all new wells.

- Construct an annular well seal, in accordance with Kern County Ordinance No. G-5006, on all new wells. (If applicable, this seal is to isolate the groundwater located above the Corcoran or "E" clay, from that found below this regional, confining clay layer.)

- Abandon wells in accordance with provisions of Kern County Ordinance No. G-5006.

- Provide guidelines to landowners for well construction and maintenance methods to minimize risk of corrosion, encrustation, casing failure, siphoning of pesticides, wellhead spills of toxics and other actions that have potential to cause aquifer contamination.

- Seek partners that would help finance the treatment of drainage water in localized areas and any otherwise "unuseable" water, all with the objective of developing useable supplies.

- Test water quality before completing new wells so that perforations are not placed in zones of poor water quality.

- Continue gathering data to update and refine the estimate of the location of the base of fresh water and pockets of poor water quality, and to enhance the understanding of the hydrologic character of the western edge of the District.

- Provide landowners within the District with the technical information required so that their operations protect the main aquifer from migration of poor water located to the west, above the E-clay, and below the production zone.

- Contact Kern County Environmental Health on a regular basis to stay current with the status of known contaminant sites.

- Obtain from Kern County Environmental Health all monitoring data for independent review of the groundwater quality beneath the City of Oxnard's bio-solids spreading operation to assure that the operation will not degrade water quality.

- Contact agencies north of the Kern County boundary to obtain the same level of information obtained in Kern County concerning; groundwater quality, contaminant sites, water level and quality monitoring, and groundwater management.

Limit inelastic subsidence.

- Maintain groundwater levels within historical water level fluctuations to eliminate or limit inelastic subsidence. This would include the actions summarized for the first basin management objective.

- Provide redundancy and flexibility in groundwater production facilities so that the spatial distribution of pumping can be altered to some extent from year to year in response to observed fluctuations in groundwater levels.

Preserve the historical flow of Poso Creek into the area.

- Maintain an existing agreement with two upstream water agencies (namely; North Kern Water Storage District and Cawelo Water District) for sharing of the waters of Poso Creek.

- Maintain the District's existing water diversion permit, and convert it to a license at the appropriate time.

Operate groundwater banking program to benefit District landowners, without adversely affecting water supplies of any District landowners or landowners in neighboring districts.

- Only water stored under the banking agreement may be withdrawn from Semitropic's groundwater basin. Water must first be stored before it is withdrawn.

- Semitropic will retain a minimum quantity of its SWP supply to maintain the quality of water delivered to farmers.

- The District will retain about ten percent of the water delivered to account for aquifer and operational losses.

- The District will not pump more water from the wells on a given farm than the total of all prior surface water deliveries to that farm for banking purposes.

- A network of new monitor wells, solely for monitoring purposes, is being constructed to supplement the network of production wells.

- Withdrawal of stored water would be prohibited if such withdrawals would cause the average groundwater levels over a three-year period to be 15 feet lower than the average groundwater levels which would have prevailed without the project over the same three-year period.

- Groundwater levels are reviewed by a Monitoring Committee composed primarily of representatives from surrounding water districts.

MONITORING

Management of the groundwater resource is dependent on good basic data respecting both geology and hydrology. The purpose of this element of the Management Plan is to characterize the conditions within the groundwater basin, both to provide a measure of the accomplishments of the Management Objectives and to identify and implement specific programs, as needed, to reflect changing conditions in the basin. Monitoring includes gathering the basic data and analyzing these data to characterize the basin and would be subject to modification, as needed, to reflect changes or additions in the programs implemented under the Management Plan. The District considers a monitoring program as a critical tool for its future management decisions.

Implementation of the Semitropic Groundwater Banking Project involved the establishment of a Groundwater Monitoring Committee (in 1994) to develop and oversee a groundwater monitoring program. In addition to Semitropic, the Committee includes representatives from five neighboring water agencies (reference Figure 16). The Kern County Water Agency and the California Department of Water Resources (DWR) are interested parties and participate in Committee activities from time to time. Specific activities have included development of monitoring and sampling plans, construction of new monitor wells, preparation of water-level elevation maps with groundwater flow lines (for both the upper and lower zones, i.e., above and below the Corcoran clay, respectively), preparation of water-level hydrographs, and preparation of maps of the concentrations of selected water quality parameters.

In 1994, a Groundwater Monitoring Program was prepared and implemented by the Committee. The Monitoring Program includes Semitropic and the adjoining districts. Fundamentally, the Monitoring Program is focused on changes in water levels and changes in water quality. The Monitoring Program addresses existing monitoring activities, proposed monitoring activities, and data management and interpretation (a copy of this Program is included in Appendix 2). Subsequently, in 1996, a sampling plan was drafted for use by Semitropic and the adjoining districts. The sampling plan "…provides the acceptable procedures to be used for measuring water levels and collecting, preserving, and analyzing water samples …" (a copy of the sampling plan is included in Appendix 3).

WATER LEVELS

Water level data are used to evaluate groundwater movement, storage conditions, and pumping costs. Maps showing contours of equal water-level elevation indicate the direction of groundwater movement and (in conjunction with knowledge of the aquifer transmissivity) also can be used to quantify estimates of groundwater underflow entering and leaving the Management Area. Maps of depth to groundwater can provide insight into the distribution of pumping lifts (and so assist in estimating pumping costs). Maps showing changes in groundwater levels (when used in conjunction with data on specific yield) can be used to estimate changes in groundwater storage. In addition to these water level maps, hydrographs of water level fluctuations in selected wells provide information on seasonal and long-term variations in water levels.

Selected District-owned and privately-owned wells have been routinely measured since commencement of District operations in the mid-1970s; however, the total number of wells has varied from year to year. Currently, water levels are measured twice a year, in both the spring and fall, and these data have been made available to the Kern County Water Agency and the Department of Water Resources.

The monitoring network consists of active and inactive production wells(which are shown on maps following the MOU in Appendix 1), as well as dedicated monitor wells. Over the past ten years, the District has constructed 25 monitor wells (at 16 sites), as shown on Figure 17. Two additional monitor wells were constructed by the Department of Water Resources which are the southernmost monitor wells in the District. Table 1 summarizes the construction details, installed equipment, and monitoring/sampling frequency for these monitor wells. The network will be reviewed periodically in order to provide sufficient areal coverage to prepare representative water-level elevation and depth contour maps. Measurement of water levels will continue to be performed in both spring and fall in order to show seasonal variations in water levels. Using the same wells for monitoring over a long-term period (to the extent practical), will facilitate the preparation of meaningful water-level change maps and hydrographs.

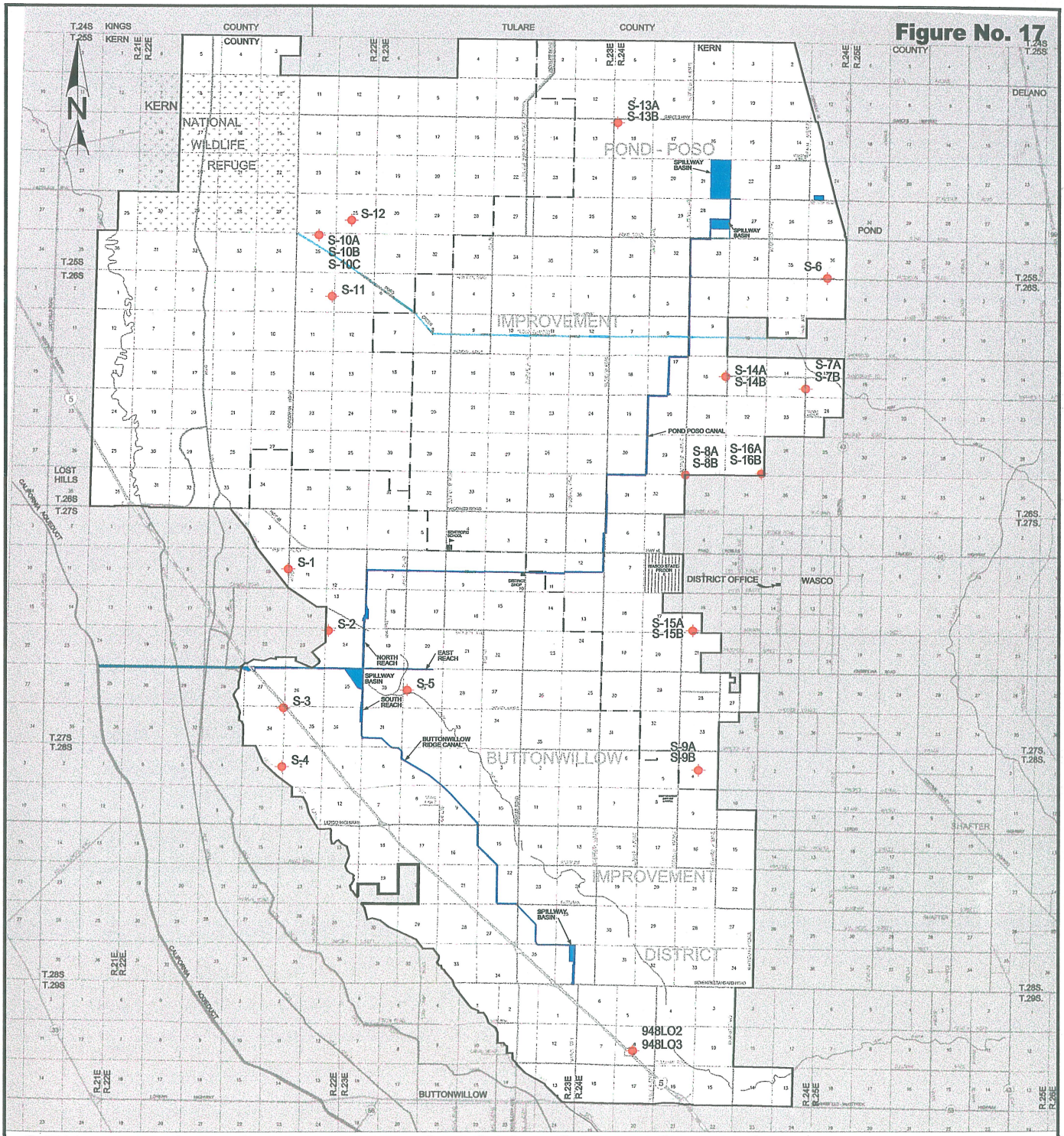
The monitoring program will provide the necessary data for the District to annually evaluate groundwater pumping lifts, groundwater pumping costs, and variations in lifts and costs over the Management Area. This, in turn, will allow the District to

Table 1

Summary of Monitor Well Characteristics

District Well No.	Location T-R-S	Year Constructed	RP Elevation (ft MSL)	Boring Depth (ft)	Completed Depth (ft)	Perforated Interval (ft)	Annular Seal Interval (ft)	Casing		Water Level Recorder	Water Level Measurement Frequency	Sampling Pump	Sampling Frequency
								Diameter (in)	Material				
S-1	27S-22E-10J	1994	240	422	340			5.761	sch.80 PVC	X	2		1
S-2	27S-22E-24D	1994	235	500	448			5.761	sch.80 PVC	X	2		1
S-3	27S-22E-34A	1994	262	500	300			5.761	sch.80 PVC	X	2		1
S-4	28S-22E-3H	1994	248	501	445			5.761	sch.80 PVC	X	2		1
S-5	27S-23E-29M	1994	202	500	430			5.761	sch.80 PVC	X	2		1
S-6	25S-24E-36Q	1995	208	450	431	381 - 431	0 - 356	6	3/16-in. Steel		2		
S-7A	26S-24E-13N	1995	206	700	600	550 - 600	0 - 520	6	1/4-in. Steel		2	X	1
S-7B	26S-24E-13N	1995	220	380	380	330 - 380	0 - 310	6	3/16-in. Steel		2		
S-8A	26S-24E-33D	1995	218	700	687	637 - 687	0 - 600	6	1/4-in. Steel		2	X	1
S-8B	26S-24E-33D	1995	220	432	432	392 - 432	0 - 362	6	3/16-in. Steel		2		
S-9A	28S-24E-4L	1995	233	700	690	660 - 690	0 - 640	6	1/4-in. Steel		2	X	1
S-9B	28S-24E-4L	1995	233	407	407	357 - 407	0 - 322	6	3/16-in. Steel		2		
S-10A	25S-22E-35B	1999			900	420 - 460 490 - 700 740 - 890		4			2		
S-10B	25S-22E-35B	1999			1270	1,250 - 1,260		4			2		
S-10C	25S-22E-35B	1999			1100	1,080 - 1,090		4			2	X	1
S-11	26S-22E-2J	2001	258	900	700	550 - 700		6 & 8	1/4-in. Steel		2		
S-12	25S-22E-25L	2001	230	940	740	510 - 740		6 & 8	1/4-in. Steel		2		
S-13A	25S-24E-18D	2003	276.3	695	690	660 - 690	0 - 630	6	1/4-in. Steel		2		1
S-13B	25S-24E-18D	2003	252.6	430	435	390 - 430	0 - 370	6	3/16-in. Steel		2		
S-14A	26S-24E-16J	2003	262	715	710	670 - 710	0 - 640	6	1/4-in. Steel		2		1
S-14B	26S-24E-16J	2003	261	485	480	430 - 480	0 - 410	6	3/16-in. Steel		2		
S-15A	27S-24E-16P	2003	278.5	605	600	550 - 600	0 - 520	6	1/4-in. Steel		2		1
S-15B	27S-24E-16P	2003	262	455	450	400 - 450	0 - 380	6	3/16-in. Steel		2		
S-16A	26S-24E-27Q	2003	272	675	670	620 - 670	0 - 590	6	1/4-in. Steel		2		1
S-16B	26S-24E-27R	2003	269	415	410	370 - 410	0 - 350	6	3/16-in. Steel		2		
948L02	29S-24E-8L02	1992	220		625	525 - 625		6			6-12		2
948L03	29S-24E-8L03	1992	225		440	360 - 440		6			6-12		2

Figure No. 17



SEMITROPIC WATER STORAGE DISTRICT
LOCATION OF MONITOR WELLS

LEGEND

- SEMITROPIC WATER STORAGE DISTRICT BOUNDARY.
- IMPROVEMENT DISTRICT BOUNDARY.
- CANAL SYSTEM.
- MONITOR WELL

MAY 2003

SCALE IN MILES

1 0 1 2 3

REV: 7/14/03 FILE:E:\RALPH\SWSD BASEMAP\SWSD_MONITOR_WELLS_BASEMAP.DWG ,BY RALPH R. SANCHEZ

evaluate the economics of purchasing and importing available water supplies from time to time. If at some time in the future, the District is not able to maintain water levels at economically viable pumping lifts for the agricultural uses at all locations in the Management Area, then the existing agricultural uses would cease in those locations.

WATER QUALITY

Water quality monitoring, including water sampling and testing, will identify the suitability of groundwater for various uses. Under the District's current program, water samples are collected annually from a representative network of wells located throughout the irrigated areas of the District. Historically, water quality testing has been (typically) limited to standard agricultural-type analyses; however, in more recent years, additional testing (e.g., Title 22) has been included for some wells. Testing will become more extensive (both in terms of the number of tests and the constituents which are included in the tests) in the future to monitor the quality of water which is pumped into the California Aqueduct during periods of recovery and return of previously banked water. In this regard, the District has developed a (spreadsheet) model to manage the quality of the blended groundwater supply which is discharged into the Aqueduct (i.e, the discharge is the result of blending the pumpage from numerous wells located throughout the District). To support this management tool, the District developed a large water quality database in 2001, when water was being returned to the Aqueduct. Groundwater pumped into the District's distribution system is also sampled and analyzed in order to monitor water quality at times when significant quantities of groundwater are being delivered by the District to its growers.

The collected data will not only be used to make real-time water management decisions during periods of groundwater discharge into the Aqueduct, but will provide the basis for identification of long-term water quality trends. If trends indicating degradation are suggested, the District would be in a position to identify the likely source(s) and significance of the degradation, and to make an assessment of whether arrest or correction of the degradation is within the District's purview. Significance would be a function of the constituent, the magnitude of the degradation, then current standards, and the areal extent of the degradation.

Similar to the water level network, the monitoring network for water quality consists of production wells (which are shown on maps following the MOU in Appendix 1), as

well as dedicated monitor wells. The 27 monitor wells, shown on Figure 17, are used to monitor both water levels and water quality.

In recent years, water quality data have been managed through the use of electronic spreadsheets. With the significant increase in water quality data which will be developed in the future, a better data management system is needed to facilitate the analysis and interpretation of the collected data. The District applied for and received a grant under the AB-303 program to, among other things, assist with the development of such a system.

RECHARGE AND PUMPAGE

Data are collected annually that allow for quantification of the various elements of the hydrologic inventory, and support further analysis of the impact of management actions through the use of tools such as groundwater modeling. Principal components of the inventory include the amount of water recharged, and the quantity of groundwater pumped. The recharge is principally comprised of the deliveries of imported water, which are measured. Most of the groundwater pumping on the other hand, is not measured, with the exception of pumping by District-owned wells. Accordingly, data
respecting crop acreages, crop evapotranspiration, and precipitation are colleted to support a reasonable estimate.

LAND SUBSIDENCE

Historically, the District has not tried to measure land surface subsidence; rather, it has relied on infrequent studies by state and federal agencies. The last such study was conducted by the Department of Water Resources in 1988, which involved releveling of an east-west line generally following the alignment of State Highway 46. This resurvey indicated that 1 to 2 feet of subsidence had occurred since 1962. Because subsidence observed between 1962 and 1970 was of this magnitude, it appears that reasonably "stable" conditions have resulted from the importation and delivery of surface water by the District, which commenced in the 1970s.

The District is considering an expansion of its groundwater banking project, which would include the construction and operation of a well field. If this expansion goes

forward, mitigation measures to address the potential for subsidence to occur during periods of significant, concentrated extraction will include ground surface surveys across the well field and nearby areas prior to operation of the well field, construction and monitoring of an extensometer within the well field, and consultation with Department of Water Resources and other appropriate agencies to implement measures to mitigate subsidence should it be detected. In this regard, it is noteworthy that the District was unsuccessful in obtaining funding assistance under AB-303 (in the fall of 2002) to construct an extensometer. The District will apply for a grant under this same program at the next opportunity.

DATA MANAGEMENT, INTERPRETATION, AND REPORTING

The Monitoring Program, included as Appendix 2, addresses data management and interpretation and is not reproduced in this section. Rather, that discussion is supplemented in this section. It is noteworthy that Semitropic pursued and secured a grant (under AB-303) to assist in the development of an electronic, GIS-based database. In order to protect the groundwater quality within the District, available water quality data from neighboring districts, Kern County Water Agency, and Kern County Environmental Health will be incorporated into the database so that the District can make the best management decisions in a regional context. Respecting interpretation, the District has plans to develop a groundwater flow model to assist in the evaluation of water level impacts of water management actions, considering both past and prospective actions.

Finally, documentation, in the form of a monitoring report, will be prepared as required to present the results of the monitoring program. The contents of the monitoring report could include:

- Maps showing spring and/or fall water elevations;
- Maps showing spring and/or fall depths to water;
- Map showing change in water levels from spring of the current year to spring of the previous year;
- Water-level hydrographs for selected key wells;

- Map showing areas of impaired water quality;
- Graphs of water quality over time for selected key wells;
- Estimate of change in groundwater storage computed using specific yield data and map of change in groundwater levels;
- Estimate of change in groundwater storage computed using the hydrologic inventory method of analysis; and
- Assessment of effectiveness of basin management objectives and other project activities.

Most of the above-cited items are addressed in a biennial report prepared on behalf of the Groundwater Monitoring Committee (reference Appendix 8 for 1999-2000 report).

PUBLIC AND AGENCY INVOLVEMENT

While the Management Area is limited to the boundaries of Semitropic, the underlying groundwater system is part of a much larger groundwater basin, i.e., it is hydraulically connected with the groundwater underlying neighboring water agencies. In particular, it is part of the Kern County subbasin of the San Joaquin Valley Basin of the Tulare Lake Hydrologic Region (reference p 179 of the Public Review Draft of "California's Groundwater Update 2003", DWR Bulletin No. 118). Figure 3 shows the boundary of the Kern County subbasin, along with the boundaries of Semitropic and neighboring water agencies. It is in this context that efforts respecting public and agency involvement were coordinated, as described in the following subsections.

PUBLIC INVOLVEMENT

Public involvement for developing this groundwater management plan was initiated by publishing notices in the Bakersfield Californian, the newspaper with the widest circulation in Kern County. Interested parties were invited to participate in developing a groundwater management plan by (1) requesting a copy of the "Basic Elements" to be addressed in the plan, (2) attending meetings of the District's Board

of Directors, (3) submitting comments and/or identifying area of interest in writing, (4) requesting and reviewing a copy of the draft plan when it is available for review, and (5) submitting comments on the draft plan by calling the District's General Manager, by delivering written comments to the District, and/or by attending a meeting of the District's Board of Directors. In this regard, the following statement was published (twice) in the Bakersfield Californian, and describes the manner in which interested parties may participate in developing the groundwater management plan:

> *NOTICE is hereby given that interested parties may participate in Semitropic Water Storage District's (District) development of a groundwater management plan pursuant to Part 2.75 (commencing at Section 10750) of Division 6 of the California Water Code. The existing Semitropic Groundwater Monitoring Committee will act as a "Technical Advisory Committee", which will provide technical review and comment during development of the Groundwater Management Plan. Further, this is to describe the manner in which other interested parties may participate; (1) request a copy of the "Basic Elements" to be addressed in the plan, (2) attend a meeting of the District's Board of Directors at 2:00 p.m. on May 14, 2003, at the District's office, to provide comment and/or indicate area of interest, (3) submit comments and/or indicate area of interest in writing, (4) request a copy of the draft plan when it is available for review (estimated to be about the end of May 2003), and (5) submit comments on the draft plan by calling the District's General Manager (Will Boschman), by delivering written comments to the District, and/or by attending a meeting of the District's Board of Directors at 2:00 p.m. on June 11, 2003, at the District's office, at which time adoption of the plan will be considered. The District's office may be reached at (661)-327-7144 or at 1101 Central Avenue, Wasco, CA. The District's mailing address is P.O. Box Z, Wasco, CA 93280.*

The Proof of Publication for the above Notice is located in Appendix 9. Other Proofs of Publication, meeting minutes, and Board Resolutions related to the groundwater management plan development and adoption process are also included in Appendix 9.

AGENCY INVOLVEMENT

As mentioned elsewhere, the Semitropic Groundwater Monitoring Committee was formed in 1994, and includes representatives from Semitropic and five neighboring

water agencies. Collectively, the six agencies represent about 465,000 acres overlying that portion of the groundwater basin lying north of the Kern River. This Committee served as a technical advisory committee, providing technical review of an administrative draft of this Plan. Semitropic is also a "member unit" of the Kern County Water Agency (KCWA); accordingly, the administrative draft was also provided to KCWA.

To date, the Monitoring Committee has been very effective in coordinating the collection and presentation of water level and water quality data among the six participating water agencies. For example, historically, each agency would collect water level data during different months of the year. Today, water level data are collected at the "same" time, which provides for a more consistent and representative database from which to construct water level maps and hydrographs, i.e., the data are all "apples", as opposed to "apples and oranges". In addition, the Monitoring Committee has been, and will continue to be, a forum for discussion and consideration of proposed projects which may affect the common groundwater resource.

Regarding the County of Kern, there is an active Water Resources Committee which is advisory to the Kern County Board of Supervisors. This Committee includes representatives from water agencies throughout Kern County. Semitropic has been active in this Committee for many years (currently, Semitropic's General Manager is Vice-Chairman). From time to time, task forces have been formed to address specific water resource issues. Most recently, a task force was formed to address the issue of land spreading of biosolids.

Going forward, specific actions respecting inter-agency cooperation are planned to include the following:

- Continue to support the efforts of the Semitropic Groundwater Monitoring Committee (which includes five neighboring water agencies).
- Seek support from neighboring water agencies for the cooperative development of a regional groundwater model.
- Evaluate additional interties between the District's conveyance and distribution system facilities and those of neighboring water agencies to enhance water exchange capabilities.

- Share groundwater monitoring data with the Kern County Water Agency.
- Support the Kern County Water Agency's efforts to improve its groundwater database.
- Share technical expertise with neighboring water agencies.
- Continue to coordinate the collection of water level and water quality data with neighboring water agencies through the Semitropic Groundwater Monitoring Committee. This would include following a uniform sampling and testing protocol.
- Contact Kern County Environmental Health on a regular basis to stay current with water quality issues and known contaminant sites.

PLAN REVIEW

The District's Board of Directors will review the Groundwater Management Plan every five years, or sooner if needed.

MEMORANDUM OF UNDERSTANDING REGARDING OPERATION AND MONITORING OF THE SEMITROPIC WATER STORAGE DISTRICT GROUNDWATER BANKING PROJECT

This Memorandum of Understanding is entered into by and among Semitropic Improvement District of Semitropic Water Storage District ("SWSD"), North Kern Water Storage District ("NKWSD"), Shafter Wasco Irrigation District ("SWID"), Southern San Joaquin Municipal Utility District ("SSJMUD"), Buena Vista Water Storage District ("BVWSD") and Rosedale-Rio Bravo Water Storage District ("RRBWSD"), hereinafter collectively referred to as the "Parties," on Sept. 14, 1994.

RECITALS

WHEREAS, SWSD and others ("Banking Partners") have proposed to enter into an agreement whereby certain facilities will be constructed to allow for the importation and storage of water in underground aquifers for later extraction and use for the benefit of SWSD and its Banking Partners ("Project"), all as more fully described in Exhibit A attached hereto and incorporated herein by this reference; and

WHEREAS, pursuant to the California Environmental Quality Act ("CEQA"), SWSD has prepared a Final Environmental Impact Report ("EIR") for the Project which identifies certain potential impacts; and

WHEREAS, the lands within NKWSD, SWID, SSJMUD, BVWSD and RRBWSD lie adjacent to the lands of SWSD, all of which lands are shown on the map which is attached hereto as Exhibit "B" and by this reference made a part hereof;

WHEREAS, each of the Parties overlies a common groundwater basin which is overdrafted and each of the Parties has for many years imported water from various sources for direct irrigation and to enhance the quantity and quality of the groundwater underlying the respective Parties and as a result of such programs the groundwater conditions underlying each of the Parties are significantly improved over those which would exist without such water importation programs; and

WHEREAS, some, but not all, of the Parties have achieved a balance between natural groundwater recharge and importation of surface water supplies on the one hand and consumptive use of water on the other; and

WHEREAS, in recent years, water banking, extraction and transfer programs in Kern County have become increasingly numerous and complex, and it is appropriate and desirable to mitigate or eliminate any short-term and long-term impacts of these programs upon potentially affected overlying landowners within SWSD and/or neighboring districts; and

WHEREAS, the Parties desire that the design, operation and monitoring of the Project be conducted and coordinated in a manner to insure that the beneficial effects of the Project are maximized and that the Project will not result in significant adverse impacts to water levels, water quality or land subsidence within the boundaries of the Parties or otherwise interfere with the existing and ongoing programs of the Parties; and

WHEREAS, it is expected that this monitoring program will be developed through a combination of technical analyses and empirical studies of selected data, to be modified and improved over time; and

WHEREAS, representatives of several of the Parties have heretofore participated in the preparation of a comprehensive draft report, Kern Water Bank, Ground Water Monitoring Program, February 1992, many of the technical aspects of which are expected to be incorporated in the groundwater monitoring program to be established and refined pursuant to this Memorandum of Understanding; and

WHEREAS, under date of December 15, 1993, the Parties authorized their joint participation in "Points To Be Included In A Memorandum of Understanding Re Initial Phase of Groundwater Monitoring Program," included as Exhibit C hereof and incorporated herein by this reference; and

WHEREAS, pursuant to said Exhibit C, Kenneth D. Schmidt has been engaged to perform certain work related to said initial phase of Ground Water Monitoring Program, including the preparation of a monitoring plan and two associated maps, "Well Location, Water Quality Network", and "Well Location, Water Level Network", which plan and maps depict the location and types of wells anticipated to be used in the initial phase of groundwater monitoring; said which plan and maps are expected to be modified from time to time as the monitoring program is developed and operated; and copies of said plan and maps are attached as Exhibit D and incorporated herein by this reference:

NOW THEREFORE, BE IT RESOLVED that based upon the mutual covenants contained herein, the Parties hereto agree as follows:

1. Project Design and Construction. SWSD has completed a preliminary design of the Project for the above-described purposes which is described at Exhibit A hereto, and which represents the maximum facilities for the Project. SWSD will construct and operate all

or a portion of the Project consistent with such design. Any major modifications of the facilities and/or significant change in the operation of the Project from that described at Exhibit A and in the EIR will be subject to additional environmental documentation.

2. Project Operation. The project shall be operated to achieve the maximum water storage and withdrawal benefits for SWSD and its Banking Partners, consistent with avoiding, mitigating or eliminating, to the greatest extent practicable, significant adverse impacts resulting from the Project.

3. Project Monitoring. The Parties agree to participate in a comprehensive monitoring program, and as members of a Monitoring Committee, as hereinafter more particularly described, in order to reasonably determine groundwater level and water quality information under Project and non-Project conditions. The program will more particularly require the following:

a. Monitoring Committee. A Monitoring Committee shall be established, comprised of one representative of each of the Parties and one ex officio non-voting representative of the Banking Partners. The Committee shall:

(1) Engage the services of suitable professional groundwater specialist who shall, at the direction of the Committee, provide assistance in the performance of the tasks identified in sections 3(a)(3) through 3(a)(8) below;

(2) Meet and confer monthly or at other intervals deemed to be appropriate in furtherance of the monitoring program;

(3) Establish a groundwater evaluation methodology; or methodologies;

(4) Specify such additional monitoring wells and ancillary equipment as are deemed to be necessary or desirable for the purposes hereof, subject to 3(c)(1) below;

(5) Prepare annual water balance studies and other interpretive studies, which will designate all sources of water and the use thereof within the study area;

(6) Develop criteria for determining the conditions constituting a significant imbalance (as such term is used in Paragraph 4 hereof) between the delivery of water for banking and/or nonbanking purposes and withdrawal for such purposes;

(7) Determine the impacts of the Project on each of the Parties by evaluating with and without Project conditions; and

(8) Develop procedures, review data, and recommend Project operational criteria for the purpose of identifying, verifying, avoiding, eliminating or mitigating to the extent practical, the creation of significant imbalances or significant adverse impacts including, but not limited to, the 15-foot, three-year rule, all as provided further at paragraphs 4, 5 and 6 below.

b. Collection and Sharing of Data. The Parties will make available to the Monitoring Committee copies of all relevant groundwater level, groundwater quality, and other monitoring data currently collected and prepared by each Party. SWSD shall annually report by areas of interest its water deliveries for banking and other purposes and groundwater withdrawals for banking and other purposes. The costs of such data collection and preparation shall continue to be borne by the respective Parties.

c. Monitoring Costs.

(1) The cost of constructing monitoring wells at twelve (12) sites including ancillary equipment as identified in Exhibit D shall be borne by SWSD. The cost of constructing monitoring wells at up to two (2) additional sites including ancillary equipment if deemed by the Monitoring Committee to be appropriate and desirable for monitoring of Project operations, shall also be borne by SWSD. The cost of any additional monitoring wells and ancillary equipment shall be borne as may be determined by separate agreement of the Parties;

(2) Each of the Parties shall be responsible for the personnel costs of its representatives on the Monitoring Committee together with the cost of monitoring operations and facilities within its own boundaries;

(3) All other groundwater monitoring costs, including employment of the professional groundwater specialist, collection, evaluation and analyses of data as adopted by the Monitoring Committee shall be allocated among and borne by the Parties as follows:

BVWSD	10%	-
NKWSD	10%	-
RRBWSD	10%	
SWSD	50%	
SWID	10%	Hwy - trim
SSJMUD	10%	
Total	100%	

The total costs to be shared under this paragraph 3c(3) shall not exceed $20,000 per 00 year adjusted every three (3) years in accordance with the Consumers Price Index or as agreed by the parties. Any additional monitoring costs shall be determined and paid for by separate agreement of the Parties requesting such additional monitoring.

4. Modification of Project Operations. The Monitoring Committee may make recommendations to SWSD for modifications in Project operations based upon evaluation(s) of data which indicate that a significant imbalance between the delivery of water for banking and/or nonbanking purposes and withdrawal of water for such purposes has been created in an area of interest. In order to avoid significant imbalance in any area of interest, SWSD shall modify, to the extent reasonable, prudent and practical, project operations within a reasonable period of time after receiving a recommendation from the Monitoring Committee. The Monitoring Committee and its members shall not act in an arbitrary, capricious or unreasonable manner.

5. The Fifteen-Foot/Three-Year Rule. Notwithstanding any other provision of this Agreement SWSD agrees that it will not make withdrawals from any particular area of SWSD

if such withdrawals have caused or would cause the average groundwater levels in such area or affected neighboring areas to be 15 feet or greater amount lower than what the average groundwater levels would have been without-Project over a 3-year period all as further defined at Exhibit E hereto.

6. Well Interference. To the extent that interference, other than insignificant interference, with the pumping lift of any existing active well, is attributable to pumping of any Project well(s), Semitropic will either stop pumping or compensate the owner for such interference. The Monitoring Committee will establish the criteria necessary to determine if well interference, other than insignificant interference, is attributable to pumping of Project well(s) by conducting pumping tests of project wells following installation of monitor wells and considering hydrogeologic information.

7. Long-Term Monitoring Program. The Parties recognize that the monitoring program to be implemented hereunder will be larger in scope than any similar program heretofore conducted in the southern San Joaquin Valley of California and accordingly is fraught with the potential for a number of unknown conditions regarding geologic, engineering, legal and economic issues. The Parties agree to use their best efforts to develop a program which is practicably applicable in addressing such matters in the short-term and more refined and useful in the longer term.

8. Dispute Resolution.

a. Submission to Monitoring Committee. All disputes regarding any provision of this agreement shall first be submitted to the Monitoring Committee for review and analysis. The Monitoring Committee shall meet and review all relevant data and facts

regarding the dispute and, if possible, recommend fair and equitable resolution of the dispute. The Monitoring Committee and its members shall not act in an arbitrary, capricious or unreasonable manner. In the event (1) the Monitoring Committee fails to act as herein provided, (2) any party disputes the Monitoring Committee's recommended resolution or (3) any party fails to implement the Monitoring Committee's recommended resolution, any party to this agreement may seek any legal or equitable remedy available as provided below at paragraph (b).

b. Arbitration. If all of the Parties agree that a factual dispute exists regarding any recommendation of the Monitoring Committee made pursuant hereto, or implementation thereof, such disputes shall be submitted to binding arbitration before a single neutral arbitrator appointed by unanimous consent, of all of the parties, and in the absence of such consent, appointed by the presiding judge of the Kern County Superior Court. The neutral arbitrator shall be a registered civil engineer, preferably with a background in groundwater hydrology. The arbitration shall be called and conducted in accordance with such rules as the contestants shall agree upon and, in the absence of such agreement, in accordance with the procedures set forth in California Code of Civil Procedure, section 1282 et seq.

Any other dispute may be pursued through a court of competent jurisdiction as otherwise provided by law.

c. Landowner Remedies. Nothing in this Agreement shall prevent any landowner within the boundaries of any Party from pursuing any remedy at law or in equity for judicial relief in the event such landowner is damaged as a result of the Project.

9. Term. This agreement shall commence on the day and year first above-written and shall continue in force and effect until terminated by (1) operation of law, (2) mutual agreement of the Parties or (3) Project abandonment and a determination by the Monitoring Committee that any significant adverse impacts have been fully mitigated as provided in this agreement.

Additionally, the Parties acknowledge that this agreement may be extended or modified in both nature and scope in order to address changes in the nature of the Project or the implementation of new and similar groundwater banking and/or monitoring programs in the area and recognize that where appropriate such other similar programs will be subject to scrutiny similar to that herein provided.

10. Complete Agreement/Incorporation Into Banking Agreements. This agreement constitutes the whole and complete agreement of the Parties regarding the Project as it relates to monitoring activities and replaces any previous agreement, written or oral, of the Parties except and to the extent such agreements are specifically referenced herein and incorporated by such reference. Any other agreements between the Parties other than relating to Project monitoring activities shall remain in full force and effect. SWSD shall incorporate this agreement by reference into any banking agreement it enters into with a Banking Partner.

11. Notice Clause. All notices required by this agreement shall be sent via first class United States mail to the following and shall be deemed delivered three days after deposited in the mail:

W. L. Boschman
Semitropic Water Storage District
P. O. Box Z
Wasco, CA 93280-0877

Martin Milobar
Buena Vista Water Storage District
P. O. Box 756
Buttonwillow, CA 93206

Dana Munn
North Kern Water Storage District
1415 18th Street
Suite 705
Bakersfield, CA 93301

Mary Collup
Rosedale-Rio Bravo Water Storage District
P. O. Box 867
Bakersfield, CA 93302-0867

Harvey Williams
Shafter-Wasco Irrigation District
P. O. Box 158
Wasco, CA 93280

Stanley Nelson
Southern San Joaquin Municipal
P. O. Box 279
Delano, CA 93216

Notice of changes in the representative or address of a Party shall be given in the same manner.

12. California Law Clause. All provisions of this agreement and all rights and obligations of the Parties hereto shall be interpreted and construed according to the laws of the State of California.

13. Amendments. This MOU may be amended by written agreement of the Parties. In addition, recognizing that the Parties may not now be able to contemplate all the implications of the Project, the Parties agree that on the tenth anniversary of implementation of the Project, if facts and conditions not envisioned at the time of entering into this contract

are present, the Parties will negotiate in good faith amendments to this MOU, subject to concurrence of any banking Partner which has a contract with SWSD incorporating the terms of this MOU, as provided in paragraph 10 hereof. If the Parties and/or Banking Partner(s) cannot agree on whether conditions have changed necessitating an amendment and/or upon appropriate amendments to the MOU, such limited issues shall be submitted to an arbitrator or court, as the case may be, as provided in paragraph 8(b) above.

14. Successors and Assigns. This agreement shall bind and inure to the benefit of the successors and assigns of the Parties; provided, however, no Party shall assign any of its rights or obligations hereunder without the prior written consent of all other parties.

15. Severability. The rights and privileges set forth in this agreement are severable and the failure or invalidity of any provision of this agreement shall not invalidate the other provisions of this agreement; rather all other provisions of this agreement shall continue and remain in full force and effect notwithstanding such partial failure or invalidity.

16. Force Majeure. All obligations of the Parties shall be suspended for so long as and to the extent the performance thereof is prevented, directly or indirectly, by earthquakes, fires, tornadoes, facility failures, floods, drownings, strikes, other casualties, acts of God, orders of court or governmental agencies having competent jurisdiction, or other events or causes beyond the control of the Parties. In no event shall any liability accrue against a party, or its officers, agents or employees, for any damage arising out of or connected with a suspension of performance pursuant to this paragraph 16.

This Agreement is executed on this 14 day of Sept. 1994, at Bakersfield California.

Semitropic Water Storage District

Buena Vista Water Storage District

North Kern Water Storage District

Rosedale-Rio Bravo Water
Storage District

Shafter Wasco Irrigation District

Southern San Joaquin Municipal
Utility District

EXHIBIT "A"

EXHIBIT A

Facilities needed for the Banking Project are as described on pages 4-10 through 4-38 of the Final Environmental Impact Report certified by Semitropic Water Storage District's Board of Directors on July 13, 1994, which pages are incorporated by this reference.

EXHIBIT "B"

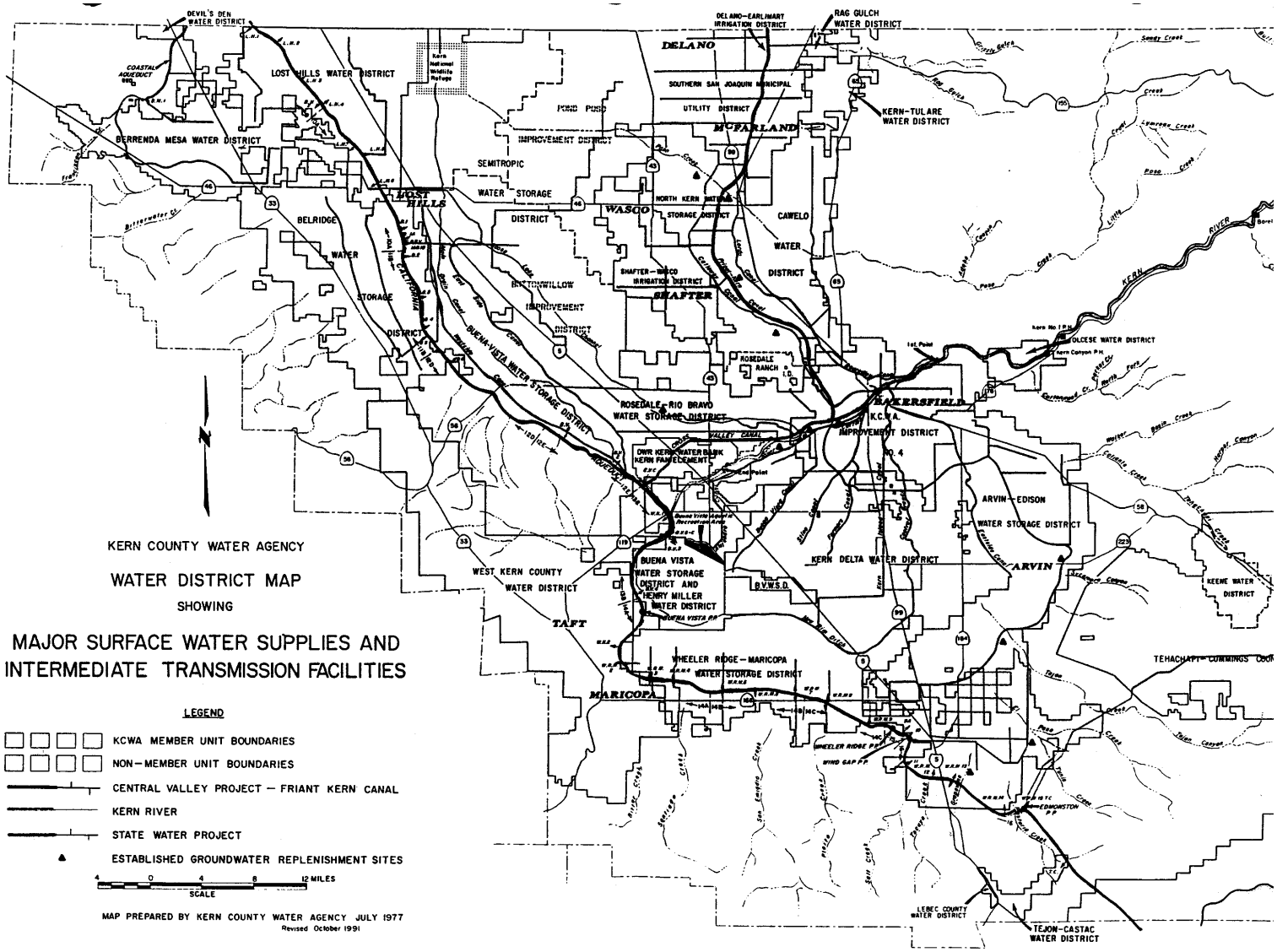

KERN COUNTY WATER AGENCY
WATER DISTRICT MAP
SHOWING
MAJOR SURFACE WATER SUPPLIES AND INTERMEDIATE TRANSMISSION FACILITIES
LEGEND
KCWA MEMBER UNIT BOUNDARIES
NON-MEMBER UNIT BOUNDARIES
CENTRAL VALLEY PROJECT - FRIANT KERN CANAL
KERN RIVER
STATE WATER PROJECT
ESTABLISHED GROUNDWATER REPLENISHMENT SITES
4 0 4 8 12 MILES
SCALE
MAP PREPARED BY KERN COUNTY WATER AGENCY JULY 1977
Revised October 1991
DEVIL'S DEN WATER DISTRICT
COASTAL AQUEDUCT
LOST HILLS WATER DISTRICT
BERRENDA MESA WATER DISTRICT
DELANO-EARLIMART IRRIGATION DISTRICT
RAG GULCH WATER DISTRICT
DELANO
SOUTHERN SAN JOAQUIN MUNICIPAL UTILITY DISTRICT
KERN-TULARE WATER DISTRICT
McFARLAND
SEMITROPIC WATER STORAGE DISTRICT
IMPROVEMENT DISTRICT
WASCO
NORTH KERN WATER STORAGE DISTRICT
CAWELO WATER DISTRICT
SHAFTER-WASCO IRRIGATION DISTRICT
SHAFTER
BELRIDGE WATER STORAGE DISTRICT
IMPROVEMENT DISTRICT
ROSEDALE RANCH I.D.
ROSEDALE-RIO BRAVO WATER STORAGE DISTRICT
BAKERSFIELD
K.C.W.A. IMPROVEMENT DISTRICT NO. 4
OLCESE WATER DISTRICT
DWR KERN WATER BANK KERN PAN RECHARGE
ARVIN-EDISON WATER STORAGE DISTRICT
KERN DELTA WATER DISTRICT
ARVIN
KEENE WATER DISTRICT
WEST KERN COUNTY WATER DISTRICT
BUENA VISTA WATER STORAGE DISTRICT AND HENRY MILLER WATER DISTRICT
B.V.W.S.D.
TAFT
WHEELER RIDGE-MARICOPA WATER STORAGE DISTRICT
MARICOPA
TEHACHAPI-CUMMINGS COUNTY
LEBEC COUNTY WATER DISTRICT
TEJON-CASTAC WATER DISTRICT
KERN RIVER
CALIFORNIA AQUEDUCT
FRIANT-KERN CANAL

EXHIBIT “C”

POINTS TO BE INCLUDED IN A MEMORANDUM OF UNDERSTANDING
RE INITIAL PHASE OF GROUND WATER MONITORING PROGRAM

1. Objective.

The Initial Phase of Ground Water Monitoring Program will focus on potential impacts from the Proposed Semitropic/MWD and Shafter-Wasco/ Semitropic water banking and extraction programs but will also be concerned with impacts of other ongoing ground water management programs of the participating agencies.

2. Participating Districts.

Suggested participants include Semitropic Water Storage District and the water agencies which adjoin its boundaries, as follows:

Buena Vista Water Storage District
North Kern Water Storage District
Rosedale-Rio Bravo Water Storage District
Semitropic Water Storage District
Shafter-Wasco Irrigation District
Southern San Joaquin Municipal Utility District

3. Employment of Consultant.

Mr. Kenneth D. Schmidt, Principal, Kenneth D. Schmidt & Associates, will be engaged to perform the work hereinafter described, under the general direction of representatives of the participating districts.

The upper limit of costs authorized by this MOU is $10,000.00.

4. Scope of Work.

(a) Review and comment on drafts of the monitoring program currently being prepared by Bookman-Edmonston Engineering, Inc., as part of the Draft Environmental Impact Report for the Semitropic Groundwater Banking Project.

(b) Review of current ground water monitoring programs of each of the participating districts.

(c) Obtain and review applicable ground water data and analyses from other agencies, such as the California Department of Water Resources, the U. S. Bureau of Reclamation, Kern County Water Agency and nonparticipating local districts.

(d) Preliminary determination, in coordination with the program proponents, of the "zone of influence" or area of potentially significant

ground water impacts from the proposed Semitropic Groundwater Banking Program and/or the Shafter-Wasco/Semitropic Interconnection and Water Banking Program.

(e) In coordination with the program proponents, prepare a description of immediate needs for an initial ground water monitoring program and description of scope of work needed for longer term monitoring, including use of appropriately calibrated ground water models. Comments will be made regarding data collection, data evaluation and data analysis.

5. Administrative Agent and Allocation of Costs.

Semitropic Water Storage District will serve as administrative agent under this MOU.

Costs will be allocated as follows:

Buena Vista Water Storage District	10%
North Kern Water Storage District	10%
Rosedale-Rio Bravo Water Storage District	10%
Semitropic Water Storage District	50%
Shafter-Wasco Irrigation District	10%
Southern San Joaquin Municipal Utility District	10%
Total	100%

It is understood that this MOU would apply only to the initial scope of work as hereinabove set forth and that the authorized expenditures hereunder would be limited to a maximum of $10,000.00. It is further understood that the basis of participation in any extension of the work authorized hereunder may be modified from the above-listed percentage shares.

Funding for future monitoring activities might be obtained from a combination of the following two components:

(a) "Banker's Factor". This would be a charge on each banking program based on the magnitude and complexity of the respective programs. It is recommended that, collectively, the bankers (and extractors) would provide most of the funds for the monitoring program(s).

(b) "Area Factor". This would be a charge, hopefully a small charge, on a uniform per acre basis, applied to the areas of irrigated lands within the respective participating agencies.

6. Cooperation of Participating Agencies.

It is expected that all participating districts would provide data from their existing programs to Mr. Schmidt's office and that the costs of such data collection and dissemination would continue to be borne by the respective districts.

It is also expected that representatives of the participating districts would continue to share thoughts and ideas among themselves and with Mr. Schmidt regarding implementation of the initial monitoring program and any extension thereof.

7. Authorized Participation.

By signature of their authorized representatives, the respective districts agree to participate in the initial phase of ground water monitoring as described above.

BUENA VISTA WATER STORAGE DISTRICT

By _____
Date Jan 13, 1994

NORTH KERN WATER STORAGE DISTRICT

By _____
Date Jan 13, 1994

ROSEDALE-RIO BRAVO WATER STORAGE DISTRICT

By _____
Date 1/13/94

SEMITROPIC WATER STORAGE DISTRICT

By _____
Date 1-13-94

SHAFTER-WASCO IRRIGATION DISTRICT

By _____
Date Jan 13, 1994

SOUTHERN SAN JOAQUIN MUNICIPAL UTILITY DISTRICT

By _____
Date 1/13/94

****

EXHIBIT “D”

PROPOSED GROUNDWATER MONITORING PROGRAM
SEMITROPIC GROUNDWATER BANKING PROGRAM

prepared for

Semitropic Water Storage District
Buena Vista Water Storage District
North Kern Water Storage District
Rosedale-Rio Bravo Water Storage District
Shafter-Wasco Irrigation District
Southern San Joaquin Municipal Utility District

by

Kenneth D. Schmidt and Associates
Groundwater Quality Consultants
Fresno, California

June 1994

KENNETH D. SCHMIDT AND ASSOCIATES
GROUNDWATER QUALITY CONSULTANTS
600 WEST SHAW, SUITE 250
FRESNO, CALIFORNIA 93704
TELEPHONE (209) 224-4412

June 1, 1994

To Members of the Groundwater
Monitoring Committee:

Submitted herewith is the proposed groundwater monitoring program for the Semitropic groundwater banking program. I appreciate the cooperation of all of you in contributing to this effort.

Sincerely yours,

Ken Schmidt

Kenneth D. Schmidt

KDS/pt

PROPOSED GROUNDWATER MONITORING PROGRAM
SEMITROPIC GROUNDWATER BANKING PROGRAM

INTRODUCTION

The proposed Semitropic WSD-MWD water-banking project essentially involves two major components. First groundwater would be stored or banked through an in-lieu recharge program, whereby canal water would be delivered as a source of irrigation water to replace groundwater that would otherwise have been pumped. Later, groundwater would either be extracted from this storage account by a number of District and landowner wells and delivered into the California aqueduct and exported from the area, or surface water would be exchanged with the MWD and groundwater pumped from those wells and delivered in the contract service area of the District.

The primary purposes of the proposed groundwater monitoring program are to determine: 1) changes in water levels due to the in-lieu recharge and groundwater extraction project, and 2) changes in groundwater quality due to the project. In late 1993, an informal association of the Kern County districts most directly concerned with the proposed Semitropic WSD banking program was formed. The following districts were included:

Semitropic Water Storage District

Buena Vista Water Storage District

North Kern Water Storage District

Rosedale-Rio Bravo Water Storage District

Shafter-Wasco Irrigation District

Southern San Joaquin Municipal Utility District

The districts listed other than Semitropic WSD essentially surround

the Semitropic WSD. The initial task of this group was to develop a groundwater monitoring program that would be suitable to all of the participants.

EXISTING MONITORING

Each of the subject districts provided information on the monitoring that they now routinely do, including crop surveys and pumpage, water levels, and water sampling and analyses. In addition, information on monitoring programs by the California Department of Water Resources (DWR) and Kern County Water Agency (KCWA) was obtained. This information is summarized in this section. For each district, crop surveys, pumpage, and intentional recharge activities are first discussed. This is followed by a discussion of water-level monitoring and groundwater quality monitoring.

Semitropic WSD

Crop Surveys and Pumpage

Crop surveys are done by the District annually. Values for applied water per acre of each crop are used to determine the total amount of applied water. Groundwater pumpage from landowner wells has been determined by deducting the amount of canal deliveries from the irrigation water requirement. Pumpage from District wells is measured regularly with totalizing flowmeters. For extractions from landowner wells associated with the banking project, the pumpage of each well to be used would be measured monthly with a totalizing flowmeter.

Water Levels

Water-levels in from 125 to 150 supply wells are measured by the District annually in January. Water-level sounders are used to measure most of the wells, although an acoustic probe is used for some wells. In addition, DWR measures water levels in 22 other wells semi-annually (January and September), and KCWA measures water levels in 58 other wells semi-annually (January and September). Information on the depths and perforated intervals of all of these wells has been compiled and tabulated by the District. There is one multi-completion monitor well installed by DWR in the south part of the District that is regularly monitored by DWR. In 1993-94, the District installed five single-completion monitor wells in the west part of the District, and these are to be regularly monitored, similar to that described for the monitor wells in the adjacent Buena Vista WSD. The District also collects pump tests on about 100 wells each year to evaluate pumping lifts in the District. Contour maps are prepared annually for pumping lift and periodically for water-level elevations in the District.

Groundwater Quality

Routine monitoring of groundwater quality by the District commenced in 1988. Water samples are now collected from about 50 to 75 wells during the summer pumping season. The samples are analyzed for major cations and anions, pH, electrical conductivity, and boron.

Buena Vista WSD

Crop Surveys and Pumpage

The District prepares an annual crop survey and map, and based on irrigation requirements and surface water deliveries, the groundwater pumpage is estimated. The estimated groundwater pumpage in the District since 1983 has ranged from almost nothing in 1983-84 and 1985 to 92,000 acre-feet in 1992.

Water Levels

The District has located all landowner irrigation wells and plotted the locations on a District map. Water levels in 50 of these wells are measured quarterly and water-level elevations are determined and tabulated. Information on the perforated intervals of these wells has not been compiled, however most of them are believed to range in depth from about 400 to 500 feet, and some are perforated as shallow as 100 feet in depth. The historical water-level record for these wells extends back about 50 years.

The District now has 14 monitor wells within its boundaries. The three southernmost wells, south of Buttonwillow, are double completion wells and were installed by DWR to monitor the Kern Fan water banking project and have been routinely monitored by DWR since 1992. Five single-completion monitor wells were installed by the District in late 1991 in the north part of the District, primarily to monitor the potential easterly migration of poor quality groundwater from the west. These wells range in depth from about 230 to 370 feet and are usually perforated over the lower 20

to 50 feet in depth. In 1993-94, three new single completion monitor wells were installed by the District in the area north of Buttonwillow to supplement gaps in the existing District monitor network. These wells ranged in depth from about 415 to 450 feet and were perforated over the lower 30 to 40 feet. Water levels in the monitor wells are measured monthly and water-level elevations are determined and compiled.

The District also has a number of shallow piezometers for the purpose of monitoring shallow groundwater levels. Water levels in these wells are also measured quarterly.

Groundwater Quality

Water samples are collected from the irrigation wells whenever they are pumping during the quarterly water-level measurement round for analyses of major cations and anions and irrigation water constituents. Water samples are collected quarterly from the monitor wells by DWR for analysis. The analyses are also primarily for irrigation water constituents. For the shallow piezometers, electrical conductivity is also determined on samples collected quarterly.

North Kern WSD

Crop Surveys, Pumpage, and Recharge

The District performs crop surveys about every four years. Monthly pumpage from each District well is determined from a combination of monthly pump rating and hour meter readings. The

District operates three spreading works and measures the diversions of canal water to these. Annually, estimates of landowner well pumpage are made by comparing canal deliveries, District pumpage, and crop irrigation requirements.

Water Levels

The District has located and mapped all landowner irrigation wells in the District. It historically did not monitor any of these wells, however is now measuring many on a semi-annual basis. There are about 70 District water supply wells. Water levels in these wells are measured semi-annually (late February-early March and late September-early October), and water-level elevations are determined and compiled. Airlines and an air pressure gage are used to measure the water levels. These devices were first calibrated by independent measurements with an electric sounder. Information on the depths and perforated intervals of the District wells is available. The District has not installed any monitor wells.

In the area within several miles of the boundary with the Semitropic WSD, the DWR measures water levels semi-annually (January and September) in eight landowner wells.

Groundwater Quality

The District collects water samples from each District well once during the summer pumping period in years when the wells are in use for analyses of irrigation water constituents. During periods when the District wells are not used, they are not sampled.

Rosedale-Rio Bravo WSD

Crop Surveys, Pumpage, and Recharge

The District operates a groundwater recharge project. The average surface water delivery to landowners is about 10,000 acre-feet per year. The District has no irrigation wells. Regular crop surveys are not done by the District. The last District crop survey was completed in October 1987. At about that time, an estimate of landowner well pumpage was made, based on canal deliveries and irrigation water requirements. The District is planning to perform a crop survey in 1994.

Water Levels

The District measures water levels in 23 landowner wells on a monthly basis. Measurements for some of these wells extend back prior to 1976. Information on the depths of most of these wells is available, and most range from about 150 to 500 feet deep. The monthly measurements for each well are averaged and tabulated. The District has not installed any monitor wells. However, the DWR recently installed four double-completion monitor wells in the District and these wells are measured routinely, as part of the Kern Fan water banking project. The shallow completion casings are typically perforated from about 350 to 450 feet in depth and the lower completion casings from about 600 to 700 feet in depth. Information from this monitoring has not yet been received by the District.

In the area within several miles of the boundary with the

Semitropic WSD, the DWR measures water levels in five other landowner wells semi-annually (January and September) and the KCWA measures water levels in one additional landowner well semi-annually (January and September).

Groundwater Quality

The District does not do groundwater quality monitoring. DWR regularly collects samples from several of their monitor wells in the District and analyzes them for irrigation water constituents.

Shafter-Wasco I.D.

Crop Surveys and Pumpage

The District performs a crop survey each year and consumptive use values are applied for each crop. Surface water deliveries to the farms are also determined and tabulated. Groundwater pumpage is then estimated from the difference between surface water deliveries and crop requirements. In 1992, about 44,000 acre feet of surface water was delivered and about 40,000 acre-feet of groundwater was pumped. Under average conditions, groundwater pumpage is about 28,000 acre-feet per year.

Water Levels

The District measures water levels in about 70 landowner wells on a semi-annual basis, and six of these are measured on a monthly basis. An acoustic well probe has been used for the water-level measurements since 1982. The District has not installed any

monitor wells. The District is in the process of mapping all landowner irrigation wells in the District.

In the area within several miles of the boundary with the Semitropic WSD, the DWR measures water levels semi-annually (January and September) in seven other landowner wells.

Groundwater Quality

Recently, the District began a water quality monitoring program for 12 landowner domestic wells in the District. Electrical conductivity, TDS, and pH are determined on samples collected semi-annually. For four of the 12 wells, more comprehensive analyses are performed on samples collected annually. These analyses include major cations and anions, boron, iron, manganese, copper, and zinc. There are seven City of Wasco wells in the District, and comprehensive water quality monitoring pursuant to DOHS regulations is regularly performed on water samples collected from each of these wells.

Southern San Joaquin MUD

Crop Surveys and Pumpage

The District does an annual crop survey. The District has no wells and does not estimate landowner pumpage.

Water Levels

The District measures water levels semi-annually in 25 landowner wells. Information on depths and perforated intervals of

these wells is not presently available. The District has not installed any monitor wells.

In the area within several miles of the boundary with the Semitropic WSD, the KCWA measures the water level in one other landowner well semi-annually (January and September).

Groundwater Quality

The District does not conduct water quality monitoring of wells in the District.

Summary

Figure 1 shows the locations of wells in which water levels are regularly measured. In the Semitropic WSD, locations of such wells throughout the District are shown. In the adjacent Districts, only such wells within several miles of the boundary with the Semitropic WSD are shown. Also provided is a summary of the state number for each well and the frequency of water-level measurements. Figure 2 shows the locations of wells which are regularly sampled. As for water-level monitoring, locations of all such wells in the Semitropic WSD are shown, whereas in the adjacent Districts, locations of only wells within several miles of the boundary with the Semitropic WSD are shown. Also provided is a summary of state numbers for these wells and the frequency of sampling. Monitor wells, landowner wells, and District wells within the area specified are included.

PROPOSED MONITORING

The proposed monitoring is divided into that to be conducted 1) within the Semitropic WSD and 2) within adjacent Districts.

Semitropic WSD

The monitoring to be conducted in the District is divided into: 1) District and landowner wells to be used for extraction, 2) monitor wells, and 3) other landowner wells in the District.

Extraction Wells

Pumpage from each of these wells as part of the banking project is to be measured on at least a monthly basis with totalizing flowmeters. In addition, depth to water would be measured on at least a semi-annual basis. Comprehensive (Title 22) drinking water analyses are to be run on water samples collected, within the past five years of each time of use, from each of these wells when they are being used to return water to the California Aqueduct. During extraction periods, water samples would be collected annually for analyses of electrical conductivity. Samples from about one third of these wells would then be selected for irrigation water analyses.

Monitor Wells

In 1993-94, the District installed five single-completion monitor wells in the west part of the District. Along with the existing single-completion Buena Vista WSD monitor wells, there

appears to be adequate monitor well coverage along the west side of the Semitropic WSD. One double completion monitor well measured by DWR in the south part of the District would also be incorporated into the program.

Consideration of the locations of wells proposed to be used for extraction and the in-lieu areas indicates that new monitor wells are desirable along the east edge of the District. Because of the large number of active landowner irrigation wells in the District that are not to be used as part of the banking project and other active landowner irrigation wells adjacent to the District, it is proposed that two sets of monitor wells would be installed in the east part of the District. One set (interior) would be located close to areas of dense District extraction wells to be used for the banking project, generally several miles west of the easterly boundary of the Semitropic WSD. Monitoring of this set of wells would be used to primarily show the influence of pumping of the extraction wells for the banking project. A second set of wells (boundary) would be located close to the easterly boundary of the Semitropic WSD. Monitoring of this set of wells would be used to help differentiate between the drawdown caused by pumpage of extraction wells for the banking project and that caused by pumping of other wells, particularly those in adjacent Districts to the east. Also, the effects of the in-lieu recharge component would be assessed at these boundary monitor wells. A total of five interior monitor well sites are proposed. The locations of these wells are generally in areas of dense extraction wells. A total of seven

monitor well sites are proposed along the eastern boundary of the Semitropic WSD. The locations of these wells were also selected to aid in monitoring the in-lieu areas.

Figure 1 shows the locations of existing and proposed monitor wells. Presently, single-completion monitor wells about 400 feet deep are proposed for the sites north of Sherwood Avenue. This would be supplemented with monitoring of deeper wells in adjacent areas (such as at the Pond School and Delano Prison, if the owners allow). South of Sherwood Avenue, double-completion wells are proposed. At these sites, one casing would be perforated opposite strata from about 350 to 450 feet deep and another opposite strata from about 650 to 750 feet deep. Continuous water-level recorders would be operated in the easterly monitor wells during extraction periods. Otherwise, quarterly water-level measurements would be made. Water samples would be collected from these monitor wells annually, by pumping with a submersible pump. The wells would be pumped for about four hours prior to collecting the water samples for chemical analyses. The samples would be analyzed for irrigation water constituents (including nitrate).

Other Wells

Approximately 50 other landowner wells in the existing water-level monitoring network would be incorporated into this program. These wells would be located near proposed extraction wells or in in-lieu areas.

Buena Vista WSD

The eight District monitor wells west of the Semitropic WSD would be incorporated into the program. In addition, six landowner wells now being monitored by the District east of the West Side Canal would be incorporated into the program. These wells are within several miles of the boundary with the Semitropic WSD. An attempt would be made to determine the depths and perforated intervals of these wells. The locations of these wells are also shown in Figure 1.

North Kern WSD

Two District supply wells that are within several miles of the boundary with the Semitropic WSD would be incorporated into the program. In addition, the eight 12 landowner wells measured by DWR would be included. An attempt would be made to determine the depths and perforated intervals of the wells measured by DWR. Also, about eight landowner wells would be selected for annual sampling for analyses of irrigation water constituents, including nitrate. In addition, pump tests would be obtained annually, if possible, for about one dozen private landowner wells in the area within several miles of the boundary with the Semitropic WSD.

Rosedale-Rio Bravo WSD

Three of the landowner wells measured by the District and one landowner well measured by the DWR would be incorporated into the program. These wells are all within several miles of the boundary

with the Semitropic WSD. An attempt would be made to determine the depths and perforated intervals of these wells, and also to map active irrigation wells in the District within three miles of proposed extraction and in-lieu areas. The five landowner wells measured by the DWR and one by the KCWA semi-annually within several miles of the boundary with the Semitropic WSD would be incorporated into the program.

About nine landowner wells within several miles of the boundary with the Semitropic WSD would be selected for annual sampling. These would be large capacity, irrigation wells, with known perforated intervals. The analyses would be for irrigation water analyses, nitrate, DBCP, and EDB.

Shafter-Wasco I.D.

Ten landowner wells measured by the District and seven landowner wells measured by DWR would be incorporated into the program. These wells are also within several miles of the boundary with the Semitropic WSD. An attempt would be made to determine the depths and perforated intervals of these wells. In addition, pump tests would be obtained annually from about one dozen landowner wells, if possible, within several miles of the boundary with the Semitropic WSD.

Southern San Joaquin MUD

Eight of the landowner wells measured by the District and one landowner well measured by the KCWA semi-annually would be

incorporated into the program. These wells are generally within several miles of the boundary with the Semitropic WSD. An attempt would be made to determine the perforated intervals of these wells, and also to map active irrigation wells in the District within three miles of proposed extraction and in-lieu areas. In addition, two other deep wells in the District would be added into the program, with owner approval. They include the new Pond School well and the Delano Prison well. Both of these wells have deep annular seals and are perforated only opposite deep deposits, and would serve as useful wells for monitoring, to supplement information from the single completion wells.

About nine landowner wells would be selected for annual sampling. These wells would have known perforated intervals. The analyses would be for irrigation water constituents (including nitrate).

Coordination of Monitoring

It would be highly useful to coordinate monitoring schedules, between the various districts, DWR, and the KCWA, to optimize the value of monitoring for this program. Presently, there appears to be some overlap of monitoring programs, and some differences in the times when the water levels are measured, procedures for measurements, times when water samples are collected, sampling procedures, types of analyses, and in other aspects.

In terms of water levels, measurements in the westerly monitor wells should be coordinated between Semitropic WSD and the Buena

Vista WSD. In terms of District and landowner wells, water levels should be measured semi-annually (spring and fall) during the same week if possible. Information from the water-level recorders and monthly measurements in some wells should be used to determine exactly when these measurements are made. The spring measurement would coincide with the shallowest annual level, and the fall measurement with the deepest (non-pumping) annual level. The semi-annual measurements would also be done during the same week that the monitor wells are measured.

The times of water sampling should be coordinated. Annual samples from large-capacity wells should be collected during heavy pumping periods, probably during July. The monitor wells should be sampled during the same month. Also, if possible, a uniform list of constituents to be analyzed should be developed, with one exception. DBCP and EDB concentrations would also be monitored in the Rosedale-Rio Bravo WSD, because of the high levels previously found.

DATA MANAGEMENT AND INTERPRETATION

The goal of this part of the monitoring program is to compile, plot, and map the accumulated data in a manner so that the hydrogeologic and water quality impacts of the proposed banking program can be clearly demonstrated. Following are some proposed data management techniques.

Water Levels

Semi-annual water-level elevation contour maps would be prepared by an experienced hydrogeologist (not a computer). Initially, two sets of maps would be prepared. One would be for strata above approximately 350 to 400 feet in depth. Another would be for strata below this depth. Eventually, it may be desirable to subdivide the wells which are measured into three or more depth intervals. Besides water-level elevation contours, flowlines indicating the direction of groundwater flow would also be shown on the maps.

Water-level hydrographs would be prepared for all measured wells. For previously measured wells, these would extend back to the original measurements. On each hydrograph, the state well number, local number or owner's identification, and the depth and perforated interval would be shown.

Information on pumping lifts from pump tests in key areas would also be compiled and reviewed. The water-level information would be reviewed annually, and recommendations provided on changes in the monitoring program, if any are necessary.

Pumpage and Recharge

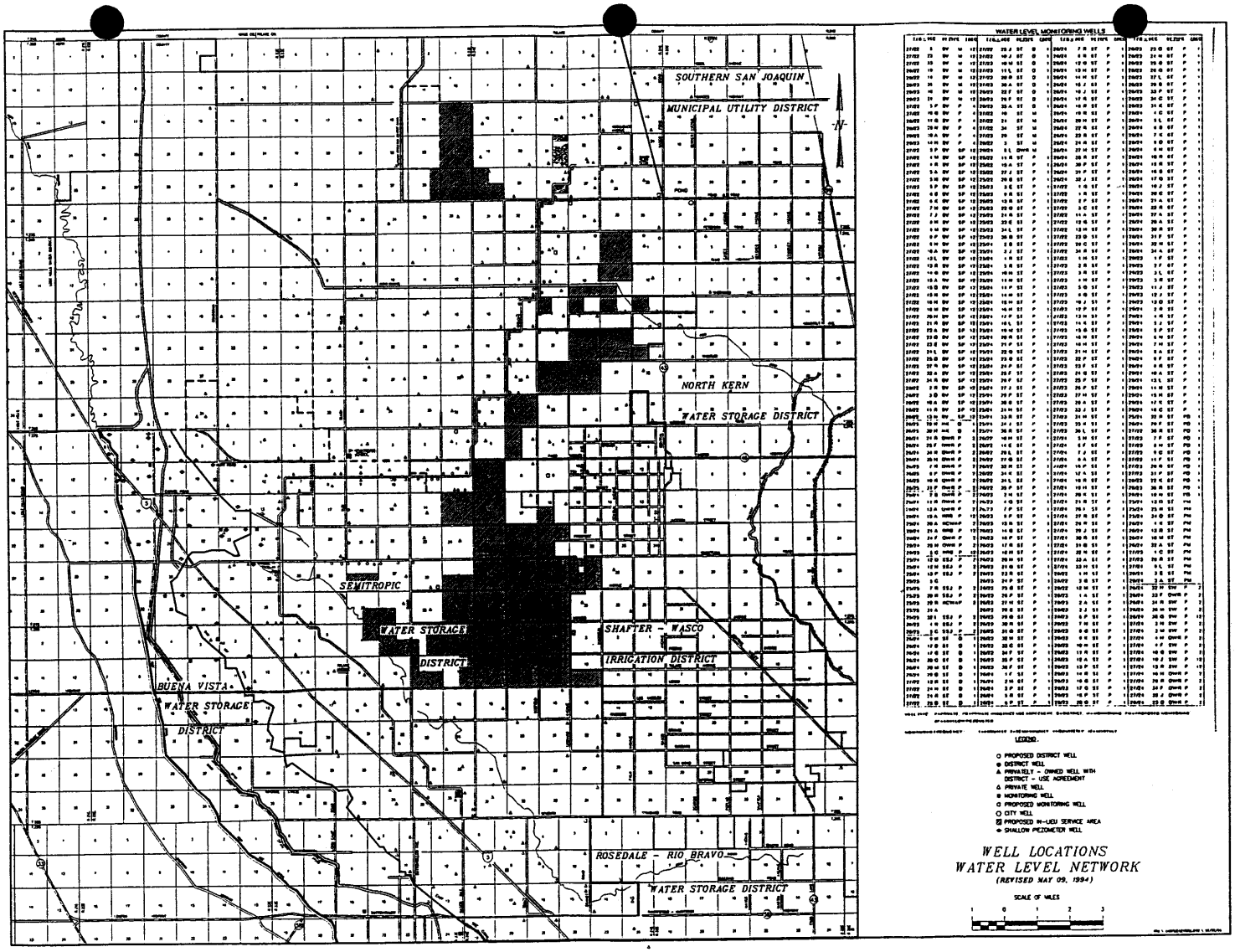
Information on extractions for the water-banking program, and amounts of in-lieu recharge in the Semitropic WSD would be compiled annually. In addition, estimates of pumpage and intentional recharge in the surrounding districts would be compiled. This information would be used in evaluating water-level trends.

Chemical Quality

Maps would initially be prepared annually, showing concentrations of key constituents in water from sampled wells. Electrical conductivity, boron, and nitrate would likely be shown. As for water levels, it may be possible to prepare one map for the shallower groundwater (above a depth of about 350 to 400 feet) and another for the deeper groundwater. After several years, the frequency of preparing these maps might be decreased to biennial or triennial. In addition, more than two depth intervals might be mapped.

Hydrographs would also be prepared for key constituents, such as electrical conductivity, boron, and nitrate. For wells previously monitored, these would extend back to the initial sampling.

This information would be reviewed and interpreted with respect to water-level changes, in-lieu recharge, and extraction pumpage for the proposed project.


SOUTHERN SAN JOAQUIN
MUNICIPAL UTILITY DISTRICT
N
NORTH KERN
WATER STORAGE DISTRICT
SEMITROPIC
WATER STORAGE
DISTRICT
SHAFTER - WASCO
IRRIGATION DISTRICT
BUENA VISTA
WATER STORAGE
DISTRICT
ROSEDALE - RIO BRAVO
WATER STORAGE DISTRICT
WATER LEVEL MONITORING WELLS
LEGEND
PROPOSED DISTRICT WELL
DISTRICT WELL
PREVIOUSLY - OWNED WELL WITH DISTRICT - USE AGREEMENT
PRIVATE WELL
MONITORING WELL
PROPOSED MONITORING WELL
CITY WELL
PROPOSED IN-LIEU SERVICE AREA
SHALLOW PIEZOMETER WELL
WELL LOCATIONS
WATER LEVEL NETWORK
(REVISED MAY 09, 1994)
SCALE OF MILES
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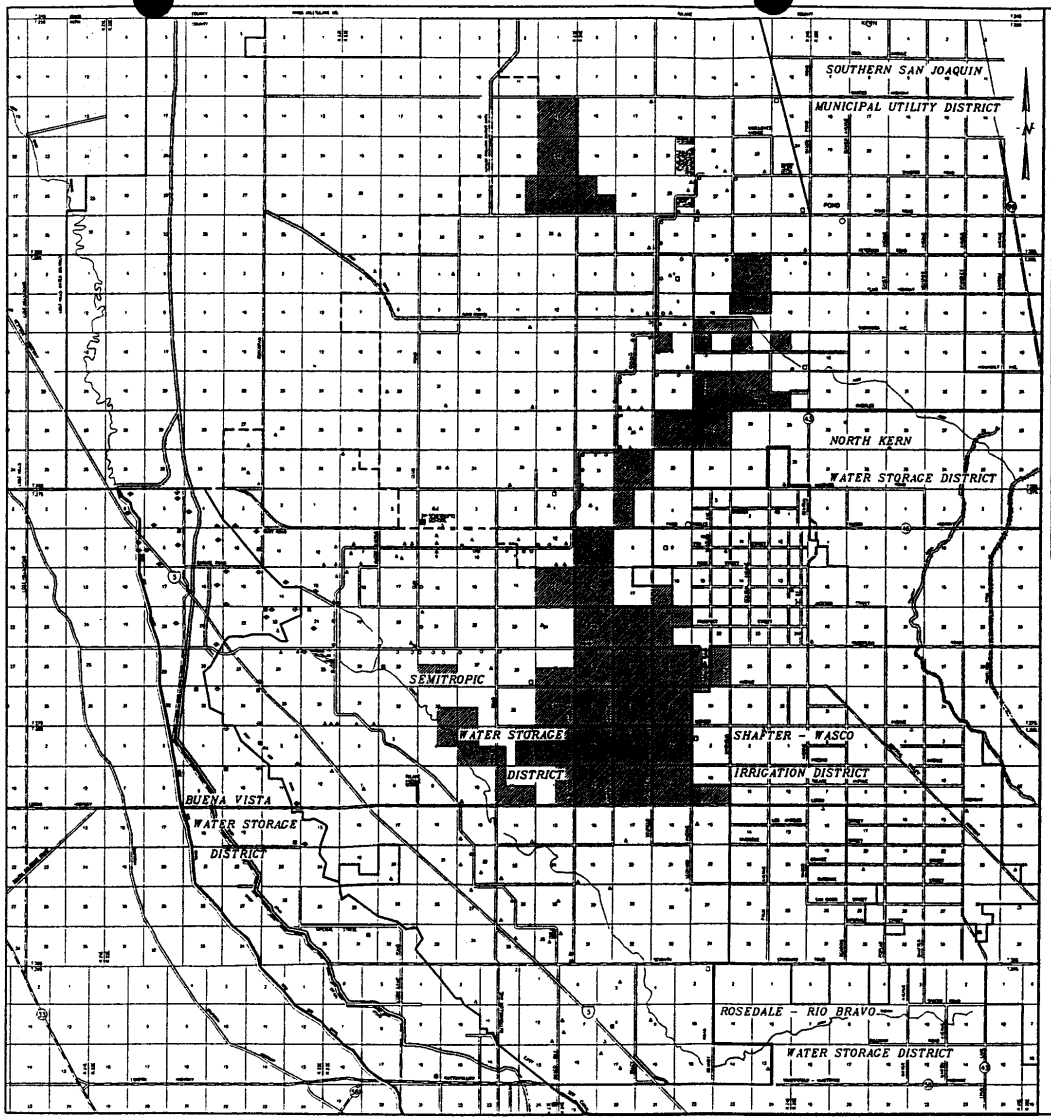

WATER QUALITY MONITORING WELLS

T/R - SEC	BY	TYPE	FREQ
27/22	B	BV	M	4
27/22	23	BV	M	4
27/22	33	BV	M	4
28/22	10	BV	M	4
28/22	14	BV	M	4
29/23	31	BV	M	4
29/23	10	BV	M	4
28/23	24	BV	M	4
27/22	3 F	BV	SP	12
27/22	4 M	BV	SP	12
27/22	4 R	BV	SP	12
27/22	5 A	BV	SP	12
27/22	5 H	BV	SP	12
27/22	5 P	BV	SP	12
27/22	6 B	BV	SP	12
27/22	6 K	BV	SP	12
27/22	7 H	BV	SP	12
27/22	7 J	BV	SP	12
27/22	8 H	BV	SP	12
27/22	8 M	BV	SP	12
27/22	8 P	BV	SP	12
27/22	9 H	BV	SP	12
27/22	10 A	BV	SP	12
27/22	13 L	BV	SP	12
27/22	13 R	BV	SP	12
27/22	14 G	BV	SP	12
27/22	15 A	BV	SP	12
27/22	15 O	BV	SP	12
27/22	15 N	BV	SP	12
27/22	16 H	BV	SP	12
27/22	16 M	BV	SP	12
27/22	20 H	BV	SP	12
27/22	21 R	BV	SP	12
27/22	23 A	BV	SP	12
27/22	23 D	BV	SP	12
27/22	23 E	BV	SP	12
27/22	24 L	BV	SP	12
27/22	25 D	BV	SP	12
27/22	27 R	BV	SP	12
27/22	33 A	BV	SP	12
27/22	34 R	BV	SP	12
28/22	2 R	BV	SP	12
28/22	3 Q	BV	SP	12
28/22	10 A	BV	SP	12
28/22	11 R	BV	SP	12
28/22	13 N	BV	SP	12
28/23	26 N	NK	D	4
28/23	36 H	NK	D	4
25/25	5 C			
26/25	31 A			
27/22	10	ST	M	
27/22	24	ST	M	
27/22	34	ST	M	
27/23	29	ST	M	
28/22	3	ST	M	
29/24	8 L	DWR	M	
28/23	13 M	ST	P	1
25/23	36 Q	ST	P	1
25/24	11 M	ST	P	1
25/24	17 A	ST	P	1
25/24	36 R	ST	P	1
26/22	26 L	ST	P	1
26/22	27 Q	ST	P	1
26/22	34 K	ST	P	1
26/23	4 H	ST	P	1
26/23	6 H	ST	P	1
26/23	11 R	ST	P	1
26/23	20 F	ST	P	1
26/23	21 Q	ST	P	1
26/23	23 R	ST	P	1
26/23	31 Q	ST	P	1
26/23	33 H	ST	P	1
26/23	35 P	ST	P	1
26/24	3 H	ST	P	1
26/24	16 R	ST	P	1
26/24	23 R	ST	P	1
26/24	26 R	ST	P	1
27/22	23 K	ST	P	1
27/23	4 F	ST	P	1
27/23	4 Q	ST	P	1
27/23	24 E	ST	P	1
27/23	28 P	ST	P	1
27/23	27 J	ST	P	1
27/24	6 F	ST	P	1
27/24	16 R	ST	P	1
27/24	26 H	ST	P	1
27/24	36 P	ST	P	1
26/23	2 H	ST	P	1
26/23	12 A	ST	P	1
26/23	2 A	ST	P	1
26/24	3 H	ST	P	1
26/23	7 K	ST	P	1
26/23	10 N	ST	P	1
26/23	14 R	ST	P	1
26/23	20 P	ST	P	1
26/23	23 N	ST	P	1
26/23	27 C	ST	P	1
26/23	32 A	ST	P	1
26/24	4 J	ST	P	1
26/24	7 H	ST	P	1
26/24	15 E	ST	P	1
26/24	17 P	ST	P	1
26/24	28 A	ST	P	1
29/23	3 R	ST	P	1
29/23	12 R	ST	P	1
29/24	7 E	ST	P	1
29/24	7 M	ST	P	1
29/24	8 P	ST	P	1
29/24	9 F	ST	P	1
29/24	13 L	ST	P	1
29/24	17 E	ST	P	1
29/24	17 K	ST	P	1
25/24	13 D	ST	PM	
25/24	25 R	ST	PM	
25/24	34 D	ST	PM	
26/24	4 K	ST	PM	
26/24	13 R	ST	PM	
26/24	16 M	ST	PM	
26/24	32 A	ST	PM	
27/22	1 C	ST	PM	
27/23	36 R	ST	PM	
27/24	9 L	ST	PM	
26/24	3 E	ST	PM	
29/24	3 A	ST	PM	
26/24	26 P	SW	P	2
27/24	4 R	SW	P	2
27/24	10 J	SW	P	2
27/24	13 K	SW	P	2
27/24	27 F	SW	P	2
27/25	19 N	SW	P	2
26/24	2 A	SW	P	2
26/25	4 B	SW	P	2
26/25	14 Q	SW	P	2
26/25	19 Q	SW	P	2
26/25	20 L	SW	P	2
26/25	24 L	SW	P	2
27/24	4	WSC	CY	

WELL TYPE : P=PRIVATE; D=DISTRICT; M=MONITORING; PM=PROPOSED MONITORING; CY=CITY; SP=SHALLOW PIEZOMETER

MONITORING FREQUENCY : 1=ANNUALLY; 2=SEMIANNUALLY; 4=QUARTERLY; 12=MONTHLY

LEGEND

- ○ PROPOSED DISTRICT WELL
- ● DISTRICT WELL
- ▲ PRIVATELY - OWNED WELL WITH DISTRICT - USE AGREEMENT
- △ PRIVATE WELL
- ■ MONITORING WELL
- ◇ PROPOSED MONITORING WELL
- ○ CITY WELL
- ▩ PROPOSED IN-LIEU SERVICE AREA
- ⊕ SHALLOW PIEZOMETER WELL

WELL LOCATIONS
WATER QUALITY NETWORK

(REVISED MAY 09, 1994)

SCALE OF MILES

1 0 1 2 3

SAMPLING PLAN FOR GROUNDWATER MONITORING FOR SEMITROPIC WSD WATER BANKING PROGRAM

Draft Report - For Review Purposes Only

Prepared for:

Semitropic Water Storage District
and Adjoining Districts

Prepared by:

Kenneth D. Schmidt and Associates
Groundwater Quality Consultants
Fresno, California

September 1996

SAMPLING PLAN FOR GROUNDWATER MONITORING FOR SEMITROPIC WSD WATER BANKING PROGRAM

INTRODUCTION

A groundwater monitoring program was proposed for the Semitropic WSD Groundwater Banking Program in June 1994. This proposed monitoring program was subsequently included in a Memorandum of Understanding (MOU) between the project participants and the adjoining districts, and the program was commenced. Two of the most important components in the monitoring program are water-level measurements and sampling and analyses of water from wells. The measured and/or sampled wells include 1) monitor wells, 2) supply wells, 3) shallow piezometers, and 4) unused wells. A number of different entities are involved in conducting the monitoring. It is desirable to have a plan which provides the acceptable procedures to be used for measuring water levels and collecting, preserving, and analyzing water samples for this program. This plan is intended to be used as a guideline, that can be periodically updated, as modifications are made to the monitoring program. The discussion is divided into 1) water levels, and 2) water sampling. Separate discussions are generally provided for the different types of wells monitored.

A diagram should be maintained showing how to find the well, and its precise location from roads and other landmarks. Also,the precise location of the measuring point for water levels and the sampling point for water sample collection should be documented.

WATER LEVELS

There are five devices that are commonly used for measuring water levels in wells. These are: 1) steel tape, 2) electric sounder, 3) acoustic device, 4) airline, and 5) continuous recorders. Each of these is briefly described, and their applicability to specific situations is also discussed. An example of a water-level measurement field record is attached.

Steel Tapes

First, about five to ten feet of the lower end of the steel tape is chalked with carpenter's chalk. The procedure is then to lower the tape, with a weight on the bottom to keep it plumb inside the well, to below the water level. The point at the top of the well from which the water level is measured is termed the measuring point (MP) or reference point (RP). Once the end of the tape reaches the water level, the tape is run farther in until the next marker on the tape (normally at five or ten foot intervals) is reached (the run). The tape is then carefully withdrawn from the well, and the wetted extent of the tape (the cut) is precisely measured. An engineer's tape (graduated in tenths and hundredths of a foot), is used to measure this distance. This value is then added to, or subtracted from, the value previously read when the tape was fully extended into the well (the run). The date and time of measurement, the run and cut, and the calculated depth to water below the MP are carefully recorded. Water-level measurements should be made to the nearest tenth of a foot. If any nearby

(i.e., within a quarter of a mile or so) large-capacity wells are pumping at the time of the measurement, this information is also recorded. Oil is commonly present on top of the water in many irrigation wells. If oil is present, this should be recorded. Steel tapes are most useful for shallow water levels (i.e., less than about 50 to 100 feet), and for wells that do not have falling water, which precludes accurate water-level measurements with a tape. After each well is measured, the wetted part of the tape should be wiped clean with a cloth, particularly if oil was encountered in the well.

Electric Sounders

Both single and double-line electric sounders can be used to measure water levels. The single-line sounder requires metal at the surface for grounding. Electric sounders are frequently used for deep water-level measurements and where falling water is present in wells. The approach is to lower the sounding line and tip into the well until the water level is reached, which is normally indicated by observing a reading on the voltmeter. The line is then raised until the voltmeter reading returns to the reading for above the water level, and the sounding line is then again lowered in the well, until the water level is again reached. The exact point on the sounding line at the M.P. is noted. An engineer's tape is then used to measure the distance from this point to the nearest marker. This distance is added to or subtracted from the nearest depth marker reading on the sounding line to determine the

depth to water. Water-level measurements should be made to the nearest tenth of a foot. The date, time, and depth to water should be recorded. When oil is present on top of the water, it may be difficult to obtain an accurate reading of the top of the oil by this method. However, with care, both the distance to the top of the oil and top of the water can usually be measured with an electric sounder.

If metal clips are used as the depth markers on the sounding line, the distances between the markers should be carefully measured with a steel tape before each measurement round. If the markers are movable, they should be adjusted to the precise depths as measured, or a correction applied to the measurements. The necessary periodic calibrations of the sounders should also be recorded in the field book. The electric sounding wire and sounding tip should be cleaned after use in each well, if oil is present in the well.

Acoustic Devices

Acoustic devices generally measure the depth to water by timing the travel of a sound wave to the water level from the surface. These devices are not as accurate as steel tapes or electric sounders. They are unnecessary in most situations where water levels are less than 200 feet deep. They are especially useful for deep water levels (about 500 feet or greater), and in cases where an electric tape or electric sounder cannot readily be used to measure the depth to water (i.e., in cases of several

casing reductions in the well). These devices should be calibrated during each sampling round, by also measuring the water level in at least one well with a steel tape or recently calibrated electric sounder. Care should be taken in using these devices. This method doesn't allow delineation of an oil layer in a well. If oil is present on top of the water, the depth measured is for the top of the oil. Because of this and other factors, acoustic devices are not generally recommended, except if tapes or electric sounders cannot be feasibly utilized for measuring the water level.

Airlines

Airline measurements are also not as accurate as steel tapes or electric sounders. These are used primarily in water supply wells that are equipped with permanent pumps. An airline is first installed in the well next to the pump column, to an adequate depth below the water level. Air pressure is then used to temporarily blow the water out of the airline. The pressure required to do this is recorded, and, if necessary, converted to feet (14.7 psi equals 34.0 feet of water). This value is then deducted from the airline setting, to determine the depth to water. Measurements are probably only accurate to the nearest half a foot. Care should be taken to use a uniform elevation of the airgage (i.e., a specific distance above the ground surface) each time. The use of airlines is especially applicable in some large-capacity supply wells, where a steel tape or electric sounder cannot be readily inserted between the well casing and pump column. Some of the limitations of the

airline approach include:

1. the airline may leak, if the joints aren't completely sealed.
2. sometimes the airlines aren't set to the depth recorded (i.e., one or two joints are lost track of during installation).

Airlines should be periodically calibrated by also measuring the water level with a steel tape or calibrated electric sounder. In general, airlines should only be used where a steel tape or electric sounder cannot be readily used (i.e., such as in cases where there is not enough room between the pump column and inside of the well casing). When measurements are made, the pressure readings should be carefully recorded. The length of the airline and the depth to water calculation should be provided. The MP elevation relative to the ground surface should be measured each time. When calibrations are made, they should be documented in the field book.

Continuous Recorders

Both float type-recorders with the associated charts and pressure transducers with digital readouts are commonly used. Measurements for both of these approaches should be periodically calibrated, normally at least monthly, by measuring with a steel tape or recently calibrated electric sounder. There are some situations that can be encountered, such as falling water, which can render these devices inoperative. Instructions for proper use of these devices are normally provided by the manufacturer. Regu-

lar maintenance and calibration are necessary.

WELL SAMPLING

Water samples are collected from supply wells, monitor wells, and piezometers. The supply wells to be sampled have permanent pumps. Some of the monitor wells have permanent pumps and some would be sampled with portable pumping equipment. Piezometers are generally sampled by bailing with a hand bailer or a hand pump. An electrical conductivity probe can be used to directly measure the electrical conductivity of water in the shallow piezometers.

Monitor Wells

For monitor wells, the static water level is first measured. The amount of water inside the well (including the gravel pack) is then calculated (the water column length times the cross sectional area). The well is then pumped long enough to remove five well volumes, before collecting water samples for laboratory analysis. If possible, the field water temperature, pH, and electrical conductivity should be periodically measured during pumping. The pumping rate should also be periodically measured by timing the filling of a container of known volume (i.e., five or ten gallons). Normal submersible pumps (i.e., those commonly used for domestic wells) are adequate for the water sampling to be done as part of this program. All field measurements, including dates and times, should be carefully recorded in a field book.

Supply Wells

Different approaches are generally used for supply wells than for monitor wells, because the sampling results for supply wells depend highly on the previous pumping history. For actively used large-capacity wells, several hours of pumping are normally adequate to obtain samples representative of the formation water. For wells that have been pumping for an unknown duration, field measurements of water temperature, pH, and electrical conductivity over a period of 15 or 20 minutes can verify that conditions are stabilized. However, for large-capacity wells that have been idle for extended periods (i.e., months or longer) substantial pumping is often necessary before representative water samples can be obtained. From several days to a week of pumping is often necessary for such wells. This is particularly true for wells with perforations extending over large intervals, and for wells with falling water. In sampling such wells, it is extremely useful to periodically measure the water temperature, pH, and electrical conductivity during pumping (i.e., several times a day). After values of these parameters stabilize, representative water samples can usually be obtained. Notes should be kept in the field book on the date and time of field measurements and water sample collection, and the pumping history of the well (the approximate hours or days of pumping), in cases where the well had been idle prior to pumping. An example of a field parameter measurement record is attached.

Piezometers

Electrical conductivity probes can be used to directly measure the electrical conductivity of shallow groundwater (less than 50 feet deep). In general, once the probe is lowered to the sampling location (usually the midpoint between the water level and the bottom of the well, measurements should be recorded about every half a minute until the values stabilize. For laboratory analyses of constituents, small diameter hand bailers or a hand pump can be used for shallow groundwater (above a depth of about 100 feet). In this case, the static water level should be measured, and the amount of water in the piezometer determined. At least three well volumes should be removed from the well before collecting samples for laboratory analyses. In this case, if possible, water temperatures, pH, and electrical conductivity should be periodically measured in the field.

Sample Preservation

The samples for analyses of inorganic chemical constituents should be collected as follows:

- The location from which the sample is collected should be documented.
- The tap or spigot should be allowed to run for at least one minute before collecting the water sample.
- The required sample bottles are: one liter untreated polyethylene, one liter polyethylene treated with nitric acid, and 100 ml polyethylene treated with sulfuric acid.

- The untreated polyethylene bottle should be rinsed twice with the water to be sampled, then filled until it overflows, then tightly capped.
- The treated bottles should be filled to near the top, then tightly capped. These bottles should then be shaken several times to thoroughly mix the acid with the water.
- The sample bottles should be labeled and preserved.
- The appropriate sample transmittal and analysis request forms should be completed.

Table 1 provides the specific preservatives and holding times required for inorganic chemical constituents. In general, all samples should be kept in a cooled ice chest or refrigerated and delivered to the laboratory within several days of collection. An example of an analysis request form is attached.

Analytical Methods

Methods of analyses for the inorganic chemical constituents are provided in Table 2. Alternative methods may be submitted for review.

Quality Control

Quality control for field activities include duplicate samples, replicate measurements, and calibrated equipment. Duplicate samples are collected to check for precision of the analysis. One duplicate sample should be collected per sampling round. The duplicate sample would be collected, packaged, sealed and analyzed

TABLE 1 - CONTAINERS, PRESERVATIVES, AND HOLDING TIMES FOR WATER SAMPLING AND ANALYSES

Constituent	Sample Size (ml)	Preservative	Holding Time
Electrical Conductivity	100	None	28 days
pH	25	None	Analyze Immediately
Total Diss. Solids Residue at 180°C	100	None	7 days
Metals	500	HNO_3 to pH <2	6 months
Nitrate	100	H_2SO_4 to pH <2 Cool, 4°C	48 hours

All containers are polyethylene. Electrical conductivity and pH should also be measured in the field, if possible.

TABLE 2 - ANALYTICAL METHODS FOR INORGANIC CHEMICALS IN WATER

Chemical Constituent	EPA Analytical Method	Type of Analysis	Ref	Approximate Minimum Reporting Level
Calcium	200.7	I.C.P.	2	1 mg/l
Magnesium	200.7	I.C.P.	2	1 mg/l
Sodium	200.7	I.C.P.	2	1 mg/l
Potassium	200.7	I.C.P.	2	1 mg/l
Carbonate	310.1	Titrimetric	1	3 mg/l
Bicarbonate	310.1	Titrimetric	1	3 mg/l
Chloride	325.2	Auto. Colorimetric	1	1 mg/l
Sulfate	375.2	Auto. Colorimetric	1	1 mg/l
Nitrate	353.2	Auto. Colorimetric	1	1 mg/l
Total Dissolved Solids	160.1	Gravimetric	1	10 mg/l
pH	150.1	Electrometric	1	0.1
Electrical Conductivity	120.1	Probe	1	10 micromhos/cm
Boron	200.7	I.C.P.	2	0.1 mg/l

Reference 1: Methods for Chemical Analysis of Water and Wastes, EPA 600/4-79-020

Reference 2: "Inductively Coupled Plasma-Atomic Emission Spectrometric Method of Trace Elements Analysis of Water and Waste", Method 200.7 modified by CLP Inorganic Data/Protocol Review Committee.

Type of Analysis: F.A.A.: Flame Atomic Absorption
I.C.P.: Inductively Coupled Plasma

Alternative acceptable methods are provided in Standard Methods.

in an identical manner as the other samples. However, it should not be identified as a duplicate sample. In this way, the identity of the duplicate sample would be unknown to the laboratory personnel performing the analysis. The field measurements use replicate measurements, calibration of equipment, and comparing previously collected data to determine the internal quality of the data collected.

The following procedures for checking the correctness of chemical analyses are applicable specifically to water samples for which the major constituents have been analyzed. This include pH, electrical conductivity, total dissolved solids (TDS), and major anions and cations. Concentrations of the major constituents (in milligrams per liter) are summed to approximate the total dissolved solids (TDS) concentration as follows:

$$TDS = Na + K + Ca + Mg + CO_3 + 0.5\ HCO_3 + Cl + SO_4 + SiO_2 + NO_3$$

This calculated value of TDS is checked against the TDS residue at 180°C. Because silica is not usually determined, the residue value of TDS should be greater than the calculated value. Common silica concentrations in groundwater in the area are from 20 to 40 mg/l. It should be noted that for waters high in calcium sulfate, the TDS residue at 180°C cannot be expected to agree closely with the calculated value, because of water that is contained in the gypsum molecule, and this is not lost during evaporation at 180°C.

The sum of the anions and cations, when expressed as milliequivalents per liter, should balance within an acceptable tolerance. Following are the conversion factors that are used to

determine milliequivalents per liter for each major cation and anion:

Ca ÷ mg/l by 20	CO_3 ÷ mg/l by 30
Mg ÷ mg/l by 12.15	HCO_3 ÷ mg/l by 61
Na ÷ mg/l by 23	SO_4 ÷ mg/l by 48
K ÷ mg/l by 39.1	Cl ÷ mg/l by 35.5
	NO_3 ÷ mg/l by 62

The acceptable difference is based on the percentage difference defined as follows:

$$\% \text{ difference} = 100 \frac{\Sigma \text{ cations} - \Sigma \text{ anions}}{\Sigma \text{ cations} + \Sigma \text{ anions}}$$

From Standard Methods, the criteria for acceptance are as follows:

Anion Sum (meq/L)	Acceptable % Difference
0-3.0	± 0.2
3.0-10.0	± 2
10.0-800	± 2-5

Also, the ratio of the TDS in mg/l to the electrical conductivity in micromhos/cm at 25°C should be about 0.65. Values less than 0.55 or greater than 0.75 are suspect.

WATER-LEVEL MEASUREMENT FIELD RECORD

KENNETH D. SCHMIDT & ASSOCIATES
Groundwater Quality Consultants

Project: _____

Well Location: (- -) _____ Local No.: _____

Land Surface Elevation (feet): _____

Measuring Point Elevation (feet): _____

Date/Time Measured: _____ Measured By: _____

Measuring Device: _____

Pumping History: _____

_____

Measuring Point Description:

_____

_____

_____

_____

Diagram of Well & Meas. Pt.

Water-Level Measurement:

Run (feet)	Cut (feet)	Depth to Water From Meas. Pt. (feet)

Water-Level Elevation (feet): _____

Optional

Well Use: _____

Casing diameter (inches): _____

Cased Depth (feet): _____

Perforated Interval (feet): _____

Type of Pump: _____

Diagram of Well Location

Notes:

FIELD PARAMETERS MEASUREMENT RECORD

KENNETH D. SCHMIDT & ASSOCIATES
Groundwater Quality Consultants

Project: _____

Well No.: _____

Date: _____

Measured By: _____

TIME (hr)	TIME (min)	Temperature (°F)	Elec. Cond. (at 25°C)	pH	Notes

Lab. No. _____

Customer _____

er No. _____ Date Rec'd _____ By _____

Description _____

Ca _____ epm _____ ppm

Mg _____ epm _____ ppm

Na _____ epm _____ ppm

K _____ epm _____ ppm

Hardness as $CaCO_3$ _____ ppm _____ gr/gal

OH _____ epm _____ ppm

CO_3 _____ epm _____ ppm

HCO_3 _____ epm _____ ppm

E.C. Reading _____ = _____ K x 10^6 Res _____

Cl _____ epm _____ ppm

SO_4 _____ epm _____ ppm

NO_3 _____ ppm

NO_3-N _____ ppm

F _____ ppm

Fe _____ ppm

Mn _____ ppm

As _____ ppm

Cu _____ ppm

Zn _____ ppm

MBAS _____ ppm

Color _____ Color Units

Odor _____

rb. _____

pH _____

TDS _____ ppm

TRACE ELEMENTS

Ba _____

Cd _____

Cr _____

Pb _____

Hg _____

Se _____

Ag _____

ACT 9098
Kern County Water Agency

[Stats 1961 ch 1003 p 2652, effective July 6, 1961; Amended by States 1963 ch 1685 p 3308; States 1st Ex Sess 1964 ch 115 p 380; States 1965 ch 128 p 1077, ch 1448 p 3390; Stats 1967 ch 1073 p 2708; Stats 1968 ch 369 p 771, effective June 25, 1968, ch 649 p 1333, ch 1163 p 2208, effective August 8, 1968; Stats 1969 ch 33, effective April 9, 1969; Stats 1970 ch 104, operative January 1, 1971.]

AN ACT to create the Kern County Water Agency, primarily for the purpose of acquiring water supplies for its member units, and prescribing its powers and duties, providing for its organization, operation, and management, and authorizing the acquisition of property and works to carry out the purposes of the agency, authorizing the incurrence of indebtedness, providing for issuance of bonds, providing for the levy and collection of taxes for the payment of such indebtedness, providing for the issuing of bonds payable solely from revenues of the agency, and providing for the levy and collection of taxes for the payment of general agency expenses and for co-operation and contracts with any entity, and declaring the urgency thereof, to take effect immediately.

§ 5.3. Liability of member units: Contracts
§ 5.4. Reduction of payments from member units on reduction of agency's debts
§ 5.5. Reduction of member unit's obligations by assignment to another member unit
§ 5.6. Disposition of proceeds from sale, etc., of capital asset
§ 5.7. Restriction against sale or delivery of water to district or company within Antelope Valley-East Kern Water Agency: Tax exemption
§ 6. Co-operation and contracts with United States
§ 6.1. Same: "United States Contract Fund"
§ 6.2. Co-operation and contracts with political entities, subdivisions, public or private corporations or persons
§ 6.3. Election authorizing contract with State
§ 7. Same: Notice: Proposition: Ballot: Declaring directors elected: Commencement of agency's functioning: Resolution: Informalities: Time for contesting validity: Termination of proceedings where vote unfavorable
§ 7.1. Board of directors
§ 7.1-1 Same: Appointment in lieu of election
§ 7.2. Same: Meeting after election: Steps taken: Ordinances: Quorum: Rules
§ 7.3. Prerequisite approval of actions by board of supervisors: When required: Hearings: Resolution
§ 7.4. Compensation of board members
§ 7.5. Per diem and expenses of director
§ 7.6. Agency budget-public hearing
§ 8. Compensation of county surveyor: Employment and compensation of county counsel:Performance of duties by officers of county, their assistants, etc.
§ 8.1. Appointment of officers, agents, and employees
§ 9. Prohibition against director's interest in contracts
§ 9.1-9.3 [Repealed]
§ 10. Claims against agency
§ 11. Acquisition, possession, and use of property: Resolution for disposal of property
§ 12. Contracts for works or improvements
§ 12.1. Steps preliminary to undertaking works or improvements
§ 13. Debt limitation
§ 13.5. Negotiable promissory notes
§ 14. Tax levy where revenues inadequate: Maximum rate
§ 14.1. Tax levy on property of delinquent member unit
§ 14.2. Property assessments according to benefits
§ 14.3. Formation of improvement districts, and issuance of bonds, levy and collection of taxes: Projects for which districts may be formed
§ 14.4. Same: Resolution initiating formation proceedings: Contents
§ 14.5. Same: Notice of time and place of hearing
§ 14.6. Same: Hearing: Time and place: Considering objections: Right to participate in proceedings
§ 14.7. Same: Majority protest terminating proceedings: Limitation on time for instituting subsequent proceedings
§ 14.8. Same: Evidentiary effect of assessment roll in determining property ownership, etc., for majority protest
§ 14.9. Same: Exclusion of lands from proposed district on resolution of governing body of existing district
§ 14.10. Same: Resolution declaring formation of district: Prerequisite finding
§ 14.11. Same: Contents of resolution declaring district formed
§ 14.12. Same: Boundaries, and land included in district: Additional lands on petition for inclusion

§ 14.12a Same: Effective date of resolution
§ 14.12b Same: Petition protesting adoption of resolution: Election: When section not applicable
§ 14.12c Inclusion of additional lands in improvement district
§ 14.13. Same: Power, and proceedings for authorization, issuance, and sale of bonds on behalf of district
§ 14.14. Same: Power to cause taxes to be levied and collected in district
§ 14.15. Same: Procedure for levying and collecting taxes in district
§ 14.16. Same: Authorized expenditures of taxes collected: Surplus transferable to funds
§ 14.17. Same: Properties in district deemed equally benefited for tax purposes
§ 14.18. Imposition of benefit assessment
§ 14.19. Same: For improvement districts formed prior to the effective date of § 14.18.
§ 14.20. Power to levy and collect ground water charges for production from ground water supplies: Prerequisite authorization: Description of territory excluded
§ 14.21. Definitions used in connection with ground water charge
§ 14.22 Resolution of intention to establish ground water charge: Publication
§ 14.23. Declaration of purpose of ground water charge levies: Authorized uses of proceeds
§ 14.24. Required registration of water-producing facilities located within improvement district following resolution of intent: Penalty for failure to register: Information required in registration
§ 14.25. Annual report by agency engineer: Information to be included
§ 14.16. Provisions governing delivery, publication, etc., of engineering report: Notice of hearing and hearing: Findings and determinations by board
§ 14.27. Determination as to levy of ground water charge: Levy and assessment: Computation of rates: Charge as additional to other taxes or assessments: Effect of clerical errors
§ 14.28. Notice of ground water charge levy: Mailing
§ 14.29. Filing required by owner or operator of water-producing facility in district levying ground water charge: Contents: When charges due and payable: Penalty for failure to register, etc.: Employment of water measuring devices
§ 14.30. Amended statement of water production or correction of records: Filing: Proviso
§ 14.31. Record of water production and ground water charges: Preparation: Contents
§ 14.32. Temporary restraining order against operator failing to register or delinquent in payments: Injunction: Service of process: Nature of right of injunctive relief
§ 14.33. Production of water in excess of sworn statements: Investigation and report: Determination by agency: Notice to operator
§ 14.34. Action for collection of delinquent ground water charges: Recovery allowable: Provisions governing attachment on proceeding
§ 14.35. Violation: Penalty
§ 14.36. Tampering, etc., with water-measuring device: Failure to file water production statement, etc.: Declaration of misdemeanor: Punishment
§ 14.37. Additional powers for implementing enforcement of provisions of act
§ 15. Bonded indebtedness: Resolution: Election
§ 15.1. Form, terms, etc., of bonds
§ 15.2. Same: Call or redemption
§ 15.3. Sale of Bonds
§ 15.4. Source of payment of bond costs, expenses, and interest
§ 15.5. Provision for replacement of bonds
§ 15.6. Tax exemption of bonds
§ 15.7. Status of bonds as legal investments
§ 15.8. Issuance and sale of bonds at par value: Disposition of proceeds of sale
§ 15.9. Payment of bonds from tax or assessment revenue: Exemption of member unit

§ 16. Undertaking work or improvement: Statutory provisions governing procedure Meaning of terms, used in improvement acts, with reference to proceedings by water agency
§ 17. Revenue bonds: Power of board: Application of Revenue Bond Law of 1941
§ 18. Certification of bonds as legal investment
§ 19. Conformity of improvement for which bonds are voted with report, plans, etc. Changes in work: Issuance of additional bonds
§ 20. Absence of effect from repeal or amendment of act on obligations of bonds or indebtedness
§ 21. Filing statement of creation of agency: Making of assessments and collection of taxes: Tax levy and transmission of statement of tax rates
§ 21.1. Collection of agency's taxes with those of county: Payment of taxes collected to agency's treasurer: Adoption of alternative procedure of tax collection and apportionment
§ 21.2. Tax lien: Applications of general statutory provisions as to priority, time and manner of assessing, equalizing and collecting county property taxes: Liability of officers on official bond
§ 22. [Repealed]
§ 22.1. Same: Statutory provisions under which proceedings may be brought: Conclusiveness of board's findings or conclusions: Condition precedent to section's operation
§ 23. Preservation of existence, rights, powers, etc., of municipality, public district, etc., within territorial limits of agency
§ 24. Preservation of vested rights in water
§ 25. [Repealed]
§ 25.1. Same: Statutory provisions under which action may be brought: Condition precedent to section's operation
§ 26. Dissolution of agency
§ 27. Legislative declaration of necessity for special law
§ 28. Severability clause
§ 29. Citation of this act
§ 30. Act's status as emergency measure

§ 1. Creation of agency: Name: Territory

A district is hereby created to be known as the Kern County Water Agency. Said agency shall consist of all the territory lying within the exterior boundaries of the County of Kern.

§ 2. Definitions

As used in this act, the following words shall have the following respective meanings unless the context indicates otherwise:

(a) "Agency" means the Kern County Water Agency.

(b) "County" means the County of Kern of the State of California, and "board of supervisors" means the Board of Supervisors of the County of Kern.

(c) "United States" means the United States of America including any one or more of the bureaus, commissions, divisions, departments, boards, agencies, and officers of the United States of America.

(d) "State" means the State of California including any one or more of the bureaus, commissions, divisions, departments, boards, agencies, and officers of the State of California.

(e) "Work" or "works" includes dams and dam sites, reservoirs and reservoir sites, and all conduits and other facilities useful in the control, conservation, diversion, transmission and distribution of water; any replacement, renovation or improvement of the foregoing; and all land, property, franchises, easements, rights-of-way and privileges necessary or useful to operate or maintain any of the foregoing.

(f) "District" means any of the following lying within or partially within the agency: irrigation districts, county water districts, water conservation districts, water districts, water storage districts, soil conservation districts, municipalities, towns, flood control districts, and any other districts or political subdivisions of the state, other than the County of Kern, empowered by law to appropriate water and deliver water to water users.

(g) "Member unit" means any district which enters into a contract with the agency for (i) the repayment in whole or in part to the agency or any other person, corporation, public district, State of California or any political subdivision thereof, or the United States, of any or all the construction costs of any works constructed by or on behalf of the agency or such district, or for (ii) the underwriting in whole or in part of any or all of such construction costs, or for (iii) the repayment in whole or in part to the agency or any other person, corporation, public district, State of California or any political subdivision thereof, or the United States of any or all of the cost of furnishing water or a water supply to the agency or such district or the underwriting in whole or in part of such cost, or for (iv) the payment in whole or in part for water to be furnished or sold to such district by the agency, the state or the United States.

(h) "Elector" or "qualified elector" or "voter" or "qualified voter" means any elector of the county qualified under the laws of the State of California to vote in the county at general elections.

(i) "May" is permissive and "shall" is mandatory.

(j) "Board" means the board of directors of the agency.

(k) "Agency election" means the election held in every even numbered year, and consolidated with the general election, as defined in Section 23 of the Elections Code, for the election of directors.

(l) "Channel protection work" means work which is done periodically or on a continuing basis to maintain the integrity of any channel owned by the agency or any channel for which the agency has flood control responsibility under this act.

(m) "Maintenance work" means work that is performed periodically or on a continuing basis for the purpose of preserving, maintaining, and keeping any roadway, structure, or other facility belonging to the agency as nearly as possible in its original condition as constructed or subsequently improved. Such work shall not include the replacement of any roadway, structure, or facility whether such replacement is in whole or in part.

(n) "Emergency work" means any work which must be performed without undue delay to protect life and property from impending flood or eminent threat of flood or to preserve or protect an existing water supply.

(o) "Force account" means work which is performed under the direct supervision of the agency through the acquisition of materials on the open market and the use of day labor, or the rental of equipment, or contracted labor, or the employees of the agency, or any combination thereof.

§ 3. Status and powers of agency

The Kern County Water Agency is hereby declared to be and is a body politic and corporate and as such shall have, among others, the powers enumerated in this act and such other powers as the law may provide. The powers of the agency shall, except as otherwise provided, be exercised by the board of directors.

§ 3.1. Perpetual succession

The agency shall have perpetual succession.

§ 3.2. Seal

The agency shall have the power to adopt a seal and alter it at its pleasure.

§ 3.3 Power to sue and be sued

The agency shall have the power to sue and be sued, except as otherwise provided herein or by law, in all actions and proceedings in all courts, commissions, boards and tribunals of competent jurisdiction.

§ 3.4. Eminent domain

The agency shall have the power of eminent domain to acquire within or without the agency any property necessary or convenient for carrying out the powers and purposes of the agency, except that the agency shall not have the power to acquire by condemnation water or property held or used for the development, storage or distribution of water for public use without the consent of the owner of such property, unless provision is made to furnish an equivalent water supply and substitute facilities of equal usefulness for

the use of the owner of such property. In lieu of compensation and damages for the taking or damaging of any public utility facility which must be replaced by the public utility to provide service to the public equivalent to that provided by the facility taken or damaged, the agency shall pay to the public utility owning such facility its actual cost incurred to rearrange or rehabilitate the facilities of such public utility not taken or damaged but required to be rearranged or rehabilitated by reason of such taking or damaging. No action in eminent domain to acquire property or interests therein outside the boundaries of the County of Kern shall be commenced unless the board of supervisors of each affected county has consented to such acquisition by resolution.

§ 3.5. Acquisition, use, and disposition of property

The agency shall have the power to take absolutely or on condition, by grant, purchase, gift, devise, or lease, with or without the privilege of purchasing, or otherwise, real and personal property of any kind, or any interest in real or personal property, within or without the agency, necessary or convenient to the full exercise of its powers, and to hold, use, enjoy, and to lease or dispose of the same subject to the limitations set forth in Section 11.

§ 3.6. Incurring and refunding indebtedness

Subject to the limitations provided in this act, the agency shall have the power to make contracts, employ labor and to do all acts necessary for the full exercise of its purposes and powers. The board may cause construction or other work to be performed or carried out by contracts or by the agency under its own superintendence.

§ 3.7. Contracts, employment of labor, etc.

The agency shall have the power to borrow money, incur indebtedness and issue bonds or other evidence of such indebtedness in the manner provided herein; also to refund or retire any indebtedness or lien that may exist against the agency or property thereof.

§ 4. Power incidental to having sufficient water available

The agency shall have the power as limited in this act to do any and every lawful act necessary in order that sufficient water may be available for any present or future beneficial use or uses of the lands or inhabitants within the agency, including, but not limited to, irrigation, domestic, fire protection, municipal, commercial, industrial, recreational, and all other beneficial uses and purposes.

§ 4.1. Flood control, etc.

The agency shall have the power to control the flood and storm waters within the agency and the flood and storm waters of streams that have their sources outside of the agency, which streams and flood waters flow into the agency, and to conserve such waters for beneficial and useful purposes of said agency by spreading, storing, retaining and percolating into the soil within or without said agency, or to save or conserve in any manner all or any of such waters and protect from damage from such flood or storm waters the watercourses, watersheds, public highways, life and property in said agency, and the watercourses outside of the agency of streams flowing into the agency.

§ 4.2. Drainage, reclamation, etc.

The agency may drain and reclaim lands within the agency either by surface or underground works or both; and may acquire, by appropriation or other lawful means, and divert, store, conserve, transport or dispose of water resulting from such operations for any beneficial purpose or use.

§ 4.3. Appropriation and acquisition of water: Water storage: Water conservation and reclamation: Actions or proceedings

The agency shall have the power

(a) to appropriate and acquire water and water rights;

(b) to store water in surface or underground reservoirs within or outside of the agency for the common benefit of the agency;

(c) to conserve and reclaim water for present and future use within the agency;

(d) to import water into the agency and to conserve and utilize, within or outside of the agency, water for any purpose useful to the agency or the member units thereof;

(e) to commence, maintain, intervene in, defend or compromise, in the name of the agency, and to assume the costs and expenses of any action or proceeding:

(1) To declare rights in or otherwise involving the ownership or use of the natural flow of any stream of surface or subterranean supply of waters used or useful for any purpose of the agency or of common benefit to the lands within the agency or to its inhabitants;

(2) To prevent interference with or diminution of such waters;

(3) To prevent the wasteful use of water in the agency;

(4) To prevent the unlawful exportation of water from the agency;

(5) To prevent contamination, pollution or otherwise rendering unfit for beneficial use the surface or subsurface water used in the agency;

(6) To prevent any such interference with such waters as may endanger or damage the inhabitants, lands, or use of water in, or flowing into, the agency.

This section shall not authorize the agency to intervene or take part in, or to pay the costs or expenses of, actions or controversies between the owners of lands or water rights which do not affect the interests of the agency.

§ 4.4. Acquisition of works, water, and water rights

The agency shall have the power within or outside the agency to construct, purchase, lease, or otherwise acquire works and to purchase, lease, appropriate or otherwise acquire water and water rights, useful or necessary to make use of water for any purposes authorized by this act.

§ 4.5. Operation, repair, etc., of property

The agency shall have the power to operate, repair, improve, maintain, renew, replace and extend all works and property of the agency.

§ 4.6. Surveys and investigations

The agency shall have the power to make surveys and investigations for works and projects and of the water supply and resources of the agency, and to carry on and perform technical and other investigations of all kinds, make measurements, collect data and make analyses, studies and inspections pertaining to water supply, water, water rights, control of flood and storm water and use of water both within and without the agency, and for these purposes the agency shall have the right of access through its authorized representatives, to all properties within the agency; provided, that the existence of such right of access shall not relieve the agency from liability for damage sustained by any property owner by reason of the exercise of said right.

§ 4.7. Construction of pipes, etc., across public road, etc., or stream, rag etc.

The agency shall have the power to construct its pipes, pipelines, flumes and tunnels and other conduits, including facilities for the transmission of electric energy to the works of the agency, along, under or across any public road, street, alley, avenue, highway or sidewalk, or across any stream of water, watercourse, railway, canal, ditch, or flume which the route of said pipes, pipelines, canals, flumes, tunnels, or other conduits may intersect or cross, except that such works shall be constructed in compliance with any applicable laws and in such manner as to afford security for life and property, and the agency shall restore at its own expense any such crossings and intersections to their former state as nearly as may be, or to an extent which does not unnecessarily impair their usefulness. Every owner whose right-of-way shall be intersected or crossed by said pipes, pipelines, canals, flumes, tunnels or other conduits shall co-operate with the agency in forming said intersections and crossings and grant the rights therefore; provided, that nothing herein contained shall be construed to preclude or limit the right of such owner to recover just compensation for any damage or loss sustained by reason of any intersection or crossing that occurs as aforesaid.

§ 4.8. Right-of-way over public lands

There is hereby granted to the agency the right-of-way for the location, construction, and maintenance of works authorized under the provisions of this act in, over and across public lands of the State of California, not otherwise disposed of or in use, but not in any case exceeding an area which is necessary for the construction of such works and adjuncts or for the protection thereof. Whenever any selection of a right-of-way for such works or adjuncts thereto is made by the agency, the board shall transmit to the State Lands Commission, the Controller of the State and the recorder of the county in which the selected lands are situated, a plat of the lands selected, giving the extent thereof and the uses for which the same is claimed or desired, verified by the board. If the State Lands Commission approves the selections so made it shall endorse its approval upon the plat and issue to the agency a permit to use such right-of-way and lands.

§ 4.9. Relocation of highway, railroad, etc.

(a) If by any judgment in condemnation or agreement the agency is required to relocate any street, road, highway, railroad, canal or other property subject or devoted to public use, the board may acquire in the name of the agency, by agreement or condemnation, all rights-of-way and other

property necessary or proper for compliance with such agreement or judgment of condemnation and thereafter to make such conveyance of the relocated street, road, highway, railroad, canal, or other property as may be proper to comply with the agreement or judgment. All agreements for the exchange of property and all judgments requiring relocation of other public uses, as specified in this section and in Section 3.4 of this act, shall provide that in making the exchange the property condemned and exchanged shall be dedicated to public use by the party with whom such exchange is made.

(b) In the event the agency and any common carrier railroad or other public utility fail to agree as to the character or location of new improvements or works sought to be performed by the agency, the character and location of such new improvements or works and any other controversy relating thereto shall be submitted to and determined by the Public Utilities Commission.

(c) Proceedings under this section relating to the jurisdiction of said commission may be instituted, maintained and determined in the manner prescribed in Chapter 6 (commencing at Section 1201) of Part 1 of Division 1 of the Public Utilities Code.

§ 4.10. County appropriations for agency

Until such time as funds first can be made available to the agency under the provisions of this act, the board of supervisors of the county may, upon a showing that funds are needed for the purposes of the agency, appropriate money from the general fund of the county for the use of the agency in an amount not in excess of that which the agency could have raised by assessment during any one year pursuant to Section 14 of this act, or so much thereof as may be required.

§ 4.11. Reimbursement of county

The agency may reimburse the county for any funds made available by the county pursuant to Section 4.10 of this act and for any funds expended by the county in investigations, elections, or other acts incidental to the establishment of the agency.

§ 4.12. Contract with private water company

The agency shall have power to enter into contracts with any private water company within the agency whenever such contract appears to the board to be in the public interest.

§ 4.13. Borrowing money

When authorized by the board the agency shall have the power to borrow money with repayment to commence at a future date from revenues of the agency.

§ 4.14. Developing and marketing of hydroelectric energy

The agency shall have the power to construct, operate and maintain works to develop hydroelectric energy, for use by the agency in the operation of its works or as a means of assisting in financing the construction, operation and maintenance of its projects for the control, conservation, diversion and transmission of water and to enter into contracts for the sale of such energy for a term not to exceed 50 years. Such energy may be marketed only at wholesale to any public agency or private entity, or both, or the federal or state government.

§ 4.15. Contract for sale of right to use falling water for electric energy

In connection with the construction and operation of the works of the agency, the agency shall have the power to contract for the sale of the right to use falling water for electric energy purposes with any public agency or private entity engaged in the retail distribution of electric energy, for a term not to exceed 50 years.

§ 5. Transfer of water or right to use agency's works

Any water or rights to the use of the works of the agency for the conservation, control or transportation of water may be sold, leased or otherwise transferred by the agency to member units, and the agency may fix and collect rates and charges for such purposes. The agency may transfer such water or the use of agency works to other than member units for use in the agency upon a temporary or short-term basis, upon a finding by the board that such water or works exceed the needs of member units and contracts for the sale of water pursuant to Section 4.12. The agency may transfer such water or the use of agency works for use outside the agency upon a finding by the board that the water or works involved will not be needed for use within the agency.

§ 5.1. Contracts between agency and member units

The agency may enter into contracts with any member unit or with any district which becomes a member unit of the agency for any of the following purposes:

(a) The lease, purchase, or other acquisition by the agency of any of the works of such member unit or district.

(b) The construction or acquisition of works by the agency for the conservation, regulation or transmission of water for the benefit of such member unit or district; or for the furnishing or sale by the agency or the State of California or the United States to such member unit or by such member to the agency of water or a water supply for any purpose; or for the assumption, by either the agency or the member unit, as principal or guarantor or underwriter of indebtedness incurred on account of works or water furnished or sold to the agency or member unit.

(c) The sale, lease, or other disposition of water, a water supply, water rights, or works or any interests in any thereof, for any purpose by the agency or by such member unit.

(d) The operation of works and the delivery of water by the agency or by such member unit, except that:

(1) The works shall be operated in conformity with the vested rights and appropriations of each of its member units having an interest therein.

(2) There shall be delivered to each member unit all water to which such member unit is entitled under the contract entered into by the agency and such member unit.

(3) There shall not be delivered to any member unit more water than the amount to which such member unit is entitled under the contract entered into by the agency and such member unit, except that the release of water from any reservoir in the amount required to satisfy any vested right shall not constitute a delivery of water, and any amount of water assigned under Section 5.5 by one member unit to another member unit shall be delivered to the latter.

§ 5.2. Suspension of delivery of water where member unit is delinquent

The agency in its discretion may suspend delivery of water conserved by the agency or obtained by or on behalf of the agency or a member unit to any member unit during the period which said member unit is delinquent in its payment of or obligations due in respect to such water under any contract entered into by it with the agency.

§ 5.3. Liability of member units: Contracts

The liability of each member unit, as distinguished from the liability of its taxpayers and property therein for taxes levied by the agency for agency purposes, shall be limited to that portion of the total cost for water or water supply or to that portion of the total cost of construction and the operation and maintenance cost of the works acquired or constructed by or on behalf of the agency or member unit which such member unit agrees to bear.

The liability of each member unit shall be set forth fully in a written contract which shall be legally approved by the member unit in accordance with the laws governing such member unit. No contract shall be altered or modified without the consent of the agency and the legal approval of the member unit.

Each contract may provide, among other things:

(a) The total capital obligation which the member unit agrees to bear.

(b) The minimum annual payments which the member unit shall make in amortization of its capital obligation.

(c) The amount or pro rata portion of water which shall be delivered to or held in storage for the member unit.

(d) The basis of allocation of operation and maintenance costs to be borne by the member unit.

(e) The amount or other measure of water supply or water agreed to be acquired by or furnished or sold to such member unit and the cost thereof to such member unit.

Such contracts shall be fair and equitable to each contracting party, and no member unit shall receive any undue advantage over any other member unit, having proper regard for all factors and conditions involved.

Such contracts shall be executed in accordance with the laws governing such districts.

§ 5.4. Reduction of payments from member units on reduction of agency's debts

(a) In the event of any reduction in the principal of any debt of the agency underwritten by one or more member units, other than by payment thereof, the amounts to be paid to the agency by each member unit in amortization of its remaining portion of such debt shall be reduced proportionately so that the relative obligations of each such member unit shall be unchanged.

(b) In the event of any reduction in the rate of interest being paid on any part of a debt of the agency for which one or more member units are responsible, the amounts to be paid the agency by each

such member unit shall be reduced proportionately so that the relative obligation of each such member unit remains unchanged in respect to its obligation to pay any remaining interest.

§ 5.5. Reduction of member unit's obligations by assignment to another member unit

Any member unit may reduce its obligations under its contract with the agency by assignment to and acceptance by another member unit of any part of its right to receive water under its contract except that the assignment shall be legally approved, in accordance with the laws governing such member unit, by each member unit which is a party to the assignment. The total of all payments to be made by such member units to the agency shall not be reduced by virtue of the assignment and the assignor member unit may be required by the agency to guarantee the payments assumed by the assignee member unit.

§ 5.6. Disposition of proceeds from sale, etc., of capital asset

If any capital asset of the agency is sold or otherwise disposed of, the net proceeds therefrom shall be distributed to the member units, or applied against any liability of the member units to the agency in proportion to the amount contributed by each member unit to the cost of the capital asset. However, if any liability on the part of the agency or its member units for the original cost or any subsequent improvement or refinancing of such capital asset is not completely extinguished at or before the time of the sale or disposal thereof, the agency may apply as much of the proceeds of the sale as are necessary to extinguish the liability. In extinguishing such liability, the proceeds of the sale shall be applied only as the interests and liabilities of the agency and its member units shall appear.

§ 5.7. Restriction against sale or delivery of water to district or company within Antelope Valley-East Kern Water Agency: Tax exemption

Notwithstanding any provision of this act to the contrary, the Kern County Water Agency shall not sell or deliver water to any district or water company lying within a part of the Antelope Valley-East Kern Water Agency for delivery or use within the Antelope Valley-East Kern Water Agency, nor shall the property and inhabitants within the Antelope Valley-East Kern Water Agency be subject to any tax levied by the Kern County Water Agency for the purpose of making payments pursuant to its contract with the State of California made under the provisions of the California Water Resources Development Bond Act.

§ 6. Co-operation and contracts with United States

The agency shall have the power to co-operate and contract with the United States under the Federal Reclamation Act of June 17, 1902, and all acts amendatory thereof and supplementary thereto or any other act of Congress heretofore or hereafter enacted permitting co-operation or contract for the purposes of construction of works, whether for irrigation, drainage, or flood control, or for the acquisition, purchase, extension, operation and maintenance of such works, or for a water supply for any purposes, or for the assumption as principal or guarantor of indebtedness to the United States, or for carrying out any of the purposes of the agency, and for said purposes the agency shall have, in addition to the powers set forth in this act, all powers, rights and privileges possessed by irrigation districts as set out in Chapter 2 (commencing at Section 23175) of Part 6 of Division 11 of the Water Code, not inconsistent with the provisions of this act.

§ 6.1. Same: "United States Contract Fund"

All money collected in pursuance of a contract with the United States shall be paid into the agency treasury and held in a fund to be known as the "United States Contract Fund" to be used for payments due to the United States under the contract.

§ 6.2. Co-operation and contracts with political entities, subdivisions, public or private corporations or persons

The agency may co-operate and act in conjunction and contract with the United States, State of California, any municipality, district, public or private corporation, or any person, in the purchase, sale, or exchange of water, in the acquisition of water or a water supply, in the construction of any works for the controlling of flood or storm waters in the agency, or for the protection of property, watersheds, watercourses, highways and life, or for the purpose of conserving and transporting said waters for beneficial uses and purposes, including recreational uses, and for the use, operation and management and ownership of such works. The agency also may make and perform any agreement with the United States, the State, any county, municipality, district, public or private corporation, or any person for the joint acquisition, disposition, operation or management of any property, works, water or water supply of a kind which might be acquired, disposed of, or operated by the agency. Any irrigation district, water storage district, California water district, public utility district, municipal utility district, soil conservation district, county water district, water conservation district, municipality, flood control district, and any other district or political subdivision of the State empowered by law to appropriate water and deliver water to users may:

(a) Co-operate, act in conjunction with and enter into contracts with the agency for all the purposes for which the agency is empowered to co-operate or act in conjunction and contract with such districts, municipalities, and political subdivisions.

(b) Carry out the terms of such contracts.

§ 6.3. Election authorizing contract with State

(a) A proposal to enter into a contract with the State shall be authorized at an election if the contract is for any or all of the following:

(1) Repayment of construction money.

(2) Repayment of the cost of acquiring any property.

(3) Issuance of bonds.

(b) Proceedings at the election shall be had insofar as applicable in the manner provided in the case of the ordinary issuance of agency bonds.

(c) Notice of the election shall contain in addition to the information required in the case of ordinary bond elections a statement of the maximum amount of money to be payable to the State for construction purposes and cost of water supply and acquisition of property, exclusive of penalties and interest, and a general statement of the property, if any, to be conveyed by the agency pursuant to the contract.

(d) The ballots at the election shall contain a brief statement of the general purpose of the contract substantially as stated in the notice of election and the extent of the obligation to be assumed with the words "Contract-Yes" and "Contract-No" or "Contract and bonds-Yes" and "Contract and bonds-No" whichever may be applicable.

(e) A majority vote at an election shall be sufficient to authorize the execution of the contract.

§ 7. Same: Notice: Proposition: Ballot: Declaring directors elected: Commencement of agency's functioning: Resolution: Informalities: Time for contesting validity: Termination of proceedings where vote unfavorable

The board of supervisors, within 30 days after the effective date of this act, shall call and give notice of an election to be held in the agency for the purpose of determining whether it shall begin to function and exercise its powers and for the selection of persons who shall serve as directors of the agency if it shall begin to function and exercise its powers.

The election shall be held not less than 75 days, nor more than 90 days, after the effective date of this act. The candidates for director shall be nominated, and the preparations for the election shall be made, in the manner provided by Articles 2 (commencing with Section 30745) and 3 (commencing with Section 30770) of Chapter 2 of Part 4 of Division 12 of the Water Code, so far as is applicable thereto, except that each candidate must be nominated from, and seek the office for, the division in which he is a voter.

Notice of the election shall be published in a newspaper of general circulation circulated within the territory of the agency. Such notice shall be published at least twice, with an interval of at least six days between the first and last publication. Publication shall be complete at least six days before the date of the election.

The notice of the election shall contain:

(a) The date of the election;

(b) The name of the agency;

(c) The proposition to be voted on, as follows: "Shall the Kern County Water Agency begin to function and exercise its power in accordance with the provisions of the Kern County Water Agency Act?" and

(d) A statement that the first elective directors will be elected at that election, and said directors will take office if a majority of the voters vote that the agency shall begin to function and exercise its powers.

There shall be printed on the ballot, together with the names of the candidates for director from each of the respective divisions, the following question:

"Shall the Kern County Water Agency begin to function and exercise its powers in accordance with the provisions of the Kern County Water Agency Act?" Following this question, there shall be the words "yes" and "no" on separate lines, with a voting square at the right of each, in which the voters shall indicate by stamping a cross (+) his vote for or against the proposition.

If a majority of the voters voting on the proposition vote in its favor, the board of supervisors shall canvass the returns for directors and those seven persons receiving the highest number of votes in each of their respective divisions shall be declared elected. The agency shall begin to function and shall exercise its powers, and the board of supervisors, within 15 days after said election, shall by resolution enter on its minutes a declaration that the agency has begun to function and exercise its powers.

The County Clerk of Kern County, immediately after the entering of the resolution in the minutes of the board of supervisors as above provided, shall cause to be filed in the office of the Recorder of Kern County and with the Secretary of State, a certified copy of said resolution. Thereupon, the organization of the agency shall be complete.

No informality in any proceedings, including informality in the conduct of any election not substantially effecting adversely the legal rights of any person, shall invalidate the organization of the agency.

The validity of the organization of the agency shall not be contested in any proceeding commenced more than 90 days after the date that the organization of the agency is complete.

If less than a majority of the votes cast at the election is in favor of the proposition that the agency should begin to function and exercise its powers, the board of supervisors shall declare the proceedings terminated; but a petition requesting that the agency transact business and exercise its powers, signed by not less than 5,000 qualified electors residing within the territory of the agency, may be filed with the board of supervisors not later than 90 days prior to the 1962 general election, and requesting that the board of supervisors call a special election, to be consolidated with said general election, for the purpose of submitting to the voters within the territory of the agency the proposition of whether the agency should begin to function and exercise its powers and for the election of the first directors of the agency. If such petition is filed the board of supervisors shall call and hold such election, and the provisions of this section with respect to the calling and holding of such an election shall be applicable.

§ 7.1. Board of directors

The governing body of the agency shall be a board of seven directors with one director being a voter of and nominated and elected from each of seven divisions established by ordinance of the agency. Following each decennial federal census, and using the census as a basis, the board shall adjust the boundaries of any or all of the divisions of the agency so that the divisions shall be as nearly equal in population as may be. In establishing the boundaries of the divisions, the board may give consideration to the following factors: (1) topography, (2) geography, (3) cohesiveness, contiguity, integrity, and compactness of territory, and (4) community of interest of the divisions. The boundaries of the divisions shall be adjusted by the board before the first day of November of the year following the year in which each decennial federal census is taken. At any time between the decennial adjustments of district boundaries, the board may adjust the boundaries of the divisions on the basis of a census taken pursuant to Section 26203 of the Government Code, or on the basis of population estimates prepared by the State Department of Finance or the Kern County Planning Department or Kern County Planning Commission.

The term of office of any director who has been elected and whose term of office has not expired shall not be affected by any change in the boundaries of the division from which he was elected. At the first election following adjustment of the boundaries of any divisions, a director shall be elected for each division under the readjusted division plan that has the same division number as a division whose incumbent's term is due to expire. A change in the boundaries of a division shall not be made within 90 days prior to the final date of voter registration for an election of directors or between the direct primary election and the general election.

Each director shall be elected at the agency election and serve a term of four years. Each candidate for director at the agency election shall declare his candidacy and shall be nominated, election returns shall be canvassed, the election shall be held and conducted, the results shall be declared, and the certificates of election shall be issued, in the same manner as the declaration of candidacy, nomination, election, canvassing of returns, declaration of results, and issuing of certificates of election for county supervisors are made, declared, held and conducted, and issued, so far as consistent with the provisions of this act. Each of the seven candidates for director who receives the highest number of votes within his division at the agency election shall be elected, and shall take office at the same time provided by the Government Code for county officers.

All vacancies occurring in the office of director, including the failure of a person to qualify, shall be filed by appointment by the remaining directors of a person who is eligible to be elected for the vacancy.

§ 7.1-1. Same: Appointment in lieu of election

Notwithstanding any other provisions of this act to the contrary, if by 5 p.m. on the 75th day prior to the day fixed for the agency election only one person has been nominated for any office of director to be filled at that election, or no one has been nominated for such office, and if a petition has not been presented to the board signed by 5 percent of the voters in the division eligible to vote for such office requesting that the agency election be held in such division, the board shall, at a regular or special meeting held prior to the day fixed for the election, appoint to such office the person, if any, who has been nominated and no election shall be held for such office. If no person has been nominated for any such office, the board shall appoint any person to the office who is qualified on the date when the election would have been held. The person appointed shall qualify and take office and serve exactly as if elected at an agency election for such office.

§ 7.2. Same: Meeting after election: Steps taken: Ordinances: Quorum: Rules

Within 30 days after the election prescribed in Section 7 and thereafter within 30 days after those who are elected at the succeeding elections take office, the directors shall meet and organize as a board.

The board shall:

(a) Elect one of its members president.

(b) Provide for the time and place of holding its regular meeting; and

(c) Provide for the manner of calling special meetings. The board shall act only by ordinance, resolution or motion and the enacting clause of all ordinances passed by the board shall be:

> "Be it ordained by the Board of Directors of the Kern County Water Agency as follows:"
>
> All ordinances shall be signed by the president and attested by the secretary, shall be adopted, recorded and published in the same manner, except as herein otherwise expressly provided, as are ordinances of the county. A majority of the board shall constitute a quorum for the transaction of business, and the board may transact any business of the agency at its organization meeting.

The board shall establish rules for its proceedings and all legislative sessions of the board shall be public.

§ 7.3. Prerequisite approval of actions by board of supervisors: When required: Hearings: Resolution

Unless previously approved by the board of supervisors, no tax or assessment shall be levied hereunder, no zone of benefit shall be created pursuant to Section 14.2 hereof, and no expenditure of funds unless previously approved in the form of a budget by the board of supervisors shall be made. The board of supervisors may, in connection with any of the foregoing, conduct public hearings. Such hearings shall be declared by a resolution specifying the purpose and the day, hour, and place where all interested persons may appear and be heard. This resolution shall be published in the agency pursuant to Section 6063 of the Government Code in a newspaper of general circulation in the agency. The hearing may be adjourned from time to time at the discretion of the board of supervisors and at its conclusion the board of supervisors shall declare its decision

§ 7.4. Compensation of board members

Each member of the board of directors will be entitled to receive from the Agency the sum of one hundred dollars ($100) for each meeting attended, not exceeding four meetings per month, plus actual, necessary, and reasonable traveling expenses. Each member of the board of supervisors, when acting pursuant to Section 7.3, shall be entitled to receive from the Agency the sum of twenty-five dollars ($25) for each meeting attended, plus actual, necessary, and reasonable traveling expenses.

§ 7.5. Per diem and expenses of director

If allowed by the board, a director shall also receive for performing duties for the agency other than attending board meetings:

(a) Not to exceed fifty dollars ($50) for each day.

(b) Traveling and other expenses incurred by him in his employment.

§ 7.6. Agency budget-public hearing

The board of directors shall not approve an agency budget or submit it to the board of supervisors for approval unless the board has first conducted a public hearing.

The board shall publish a notice of the hearing pursuant to Section 6066 of the Government Code.

§ 8. Compensation of county surveyor: Employment and Compensation of county counsel: Performance of duties by officers of county, their assistants, etc.

If the county surveyor is a registered civil engineer and is employed to supervise the engineering work of the agency, the board may provide compensation for his services in addition to his salary as county surveyor which shall be payable from the funds of the agency. The board may employ the county counsel as the attorney for the agency and may provide compensation for his services in addition to his salary as county counsel which shall be payable from the funds of the agency. All other officers of the county, and their assistants, deputies, clerks, and employees, shall be ex officio officers, assistants, deputies, clerks and employees respectively of the agency, and shall perform, unless otherwise provided by the board, the same duties for the agency as performed for the county.

§ 8.1. Appointment of officers, agents, and employees

The board may employ agents, superintendents, engineers, attorneys, and employees necessary to carry out the provisions of this act.

The board may appoint a secretary and such other officers, agents and employees for the board or agency as in its judgment may be deemed necessary, prescribe their duties and fix their compensation. Such officers, agents and employees so appointed shall hold their respective offices or positions during the pleasure of the board.

§ 9. [Repealed by Stats 1970 ch 447 SS 2.8]

Secs. 9.1-9.3. [Repealed by Stats 1963 ch 1685 SS16-18 p 3308.]

§ 10. Claims against agency

Claims against the agency whether arising out of contract, tort, or the taking or damaging of property without compensation shall be governed by Part 3 (commencing with Section 900) and Part 4 (commencing with Section 940) of Division 3.6 of Title 1 of the Government Code.

§ 11. Acquisition, possession, and use of property: Resolution or disposal of property

The legal title to all property acquired under the provisions of this act shall be in the agency and shall be held for the uses and purposes of this act. The board may hold, use, acquire, manage, occupy and possess such property and, after declaring by resolution entered in the minutes that any real or personal property held by the agency is no longer necessary, may sell or otherwise dispose of such property, or lease the same, in the manner provided by law for the disposition and sale of property by counties.

§ 12. Contracts for works or improvements

All contracts for any improvement or unit of work, when the cost according to the estimate of the engineer will exceed ten thousand dollars ($10,000), shall be let to the lowest responsible bidder or bidders as provided in this section. The board shall first determine whether the contract shall be let as a single unit for the whole of the work, or divided into severable convenient parts. The board shall advertise for bids by three insertions in a daily newspaper of general circulation or by two insertions in a weekly newspaper of general circulation printed and published in the agency, inviting sealed proposals for the construction or performance of the improvement or work. The call for bids shall state whether the work shall be performed in one unit or divided into parts. The work may be let under a single contract or several contracts, as stated in such call. The board shall require the successful bidders to file with the board good and sufficient bonds to be approved by the board conditioned upon the faithful performance of the contract and upon the payment of their claims for labor and material. The bonds shall comply with Chapter 3 (commencing at Section 4200) of Division 5 of Title 1 of the Government Code. The board may reject any and all bids. In the event all proposals are rejected or no proposals are received, or the estimated cost of the work does not exceed ten thousand dollars ($10,000), or the work consists of channel protection, maintenance work, or emergency work, the board may have the work done by force account without advertising for bids. The agency may purchase in the open market without advertising for bids, materials and supplies for use in any work, either under contract or by force account; provided, however, that materials and supplies for use in any new construction work or improvement, except work referred to in the preceding sentence, may not be purchased if the cost thereof exceeds ten thousand

dollars ($10,000), without advertising for bids and awarding the contract there for to the lowest responsible bidder.

§ 12.1. Steps preliminary to undertaking works or improvements

(a) Except as otherwise provided in subdivision (b), no works or improvements shall be undertaken by the agency, including proceedings pursuant to either Section 16 or Section 14.4 of this act, unless an investigation and report has been made and a hearing has been held thereon as provided in either this section or Section 14.6.
The board shall make or cause to be made an engineering study and report upon the proposed works or improvements, together with estimates of the cost thereof. The board may, after reviewing the report and estimates of cost, thereafter adopt a resolution declaring its intention to proceed with the proposed works or improvements, briefly describing the same and describing the area which will be benefited thereby, whether all or part of the agency or any one or more of the member units therein.

The resolution shall further declare that a public hearing will be held thereon at a specified day, hour and place, where all persons interested may appear and be heard. The resolution shall be published in a newspaper of general circulation within the area to be benefited by the proposed work or improvement once a week for two weeks, and the last day of publication shall be not less than seven days before the day fixed for the public hearing.

At any time before or during the public hearing, any holder of title to real property in the area to be benefited may file a written protest thereto with the secretary of the board. If before the conclusion of said hearing written protests have been filed by a majority in number of the holders of title to the real property in the area benefited and who are also the holders in title to a majority of the real property in the said area according to assessed valuation as shown by the last equalized assessment roll, then the board shall not proceed further with the proposed work or improvement until proceedings are commenced and completed hereunder without such protest; provided, that such proceedings shall not be commenced for a period of six months after the date of any such majority-protest.

(b) The provisions of subdivision (a) shall not apply to

(1) channel protection work, maintenance work, or emergency work or

(2) to any work or improvement for which a specific appropriation is contained in the agency's budget and for which no special tax or assessment to pay the cost thereof shall be levied.

§ 13. Debt limitation

The agency shall not incur any indebtedness or liability exceeding in any year the income and revenue provided for such year, and any indebtedness or liability incurred in violation of this section shall be absolutely void and unenforceable. This section shall have no application to debts and liabilities incurred pursuant to the provisions of this act authorizing the issuance of bonds, the levying of special assessments, or the execution of contracts with the United States or the State.

§ 13.5. Negotiable promissory notes

The agency may issue negotiable promissory notes to pay the cost of any work or improvement for the benefit of any member unit, as determined in any agreement between the agency and the member unit, or for the benefit of any improvement district or to refund any such notes. Such notes shall bear interest at a rate not exceeding 7 percent per annum, their maturity shall not be later than five years from the date thereof, and the total aggregate amount of each notes issued for each member unit or improvement district outstanding at any one time shall not exceed the lesser of either three million dollars ($3,000,000) or 2 percent of the assessed valuation of the taxable property in the member unit or improvement district. All such notes shall be issued pursuant to a resolution of the board of directors of the agency which resolution shall, subject to the provisions hereof, prescribe the terms and conditions of such ' notes. Such notes and the interest thereon shall be payable from taxes or assessments levied on all taxable property within each improvement district or member unit for which such notes were issued or from revenues received from the member unit pursuant to any contract providing for the issuance of the notes. The board of directors is hereby authorized and directed to levy and collect taxes upon all property within the improvement district or member unit on whose behalf such notes are issued without limitation of rate or amount for the payment of the principal of and interest on such notes. Such taxes shall be in addition to any other taxes levied for all other agency purposes and shall be levied in the same manner and at the same time as all other agency taxes are levied and shall be used for no purpose other than payment of such principal and interest. No member unit or improvement district nor the property therein nor other lands within the agency shall be liable for the notes issued for the benefit of any other member unit or improvement district, nor shall any moneys derived from taxation or assessments in any of the several member units or improvement districts be used to pay the principal or interest of notes issued for any other member unit or improvement district.

§ 14. Tax levy where revenues inadequate: Maximum rate

If from any cause, the revenues of the agency shall be, or in the judgment of the board are likely to be, inadequate to pay the expenses, costs, liabilities and indebtedness of the agency, the board shall have the power, except as hereinafter provided, in any year to levy an ad valorem tax upon all taxable property in the agency to pay the costs and expenses of the agency to carry out the provisions of this act, except that the aggregate taxes or assessments levied for any one fiscal year shall not exceed five cents ($0.05) on each one hundred dollars ($100) of the assessed valuation of the taxable property in the agency; provided, that with respect to the Antelope Valley-East Kern Water Agency situated in Kern and Los Angeles Counties and to the Devils Den Water District situated in Kern and Kings Counties, as long as each such entity continues to have substantially the same powers as are now vested in it by law and has a valid contract with the State of California for a water supply from the State Water Resources Development System, the agency shall not levy any tax pursuant to this section upon any property which (a) is within the boundaries of such entity at the time of such levy and (b) is situated within the boundaries of such entity as they existed on January 1, 1969.

The foregoing limitations shall be exclusive of any tax levied pursuant to Sections 14.1, 14.2, 14.13, 15, 15.9, 16 and 17 of this act.

§ 14.1. Tax levy on property of delinquent member unit

The agency may levy a special ad valorem tax based on the last equalized county assessment roll on all the property taxable or subject to assessment by any member unit, whenever any such member unit is delinquent in any payment due the agency under a contract. The tax shall be levied only at a rate

sufficient to raise the amount delinquent, and shall be used only to reduce the liability of the delinquent member unit.

No property in any portion of the agency, other than that in the delinquent member unit, shall be liable for or taxed to pay such delinquency.

§ 14.2. Property assessments according to benefits

For the purpose of making payments pursuant to contracts entered into by the agency with the United States or the State, in accordance with the provisions of this act, the agency, in addition to the revenues and taxes otherwise provided for in this act, may make assessments apportioned in accordance with the benefits and, for this purpose, may establish zones of benefit which reflect the degree of benefit resulting to each zone from such contract or contracts. In the ascertainment of the benefits derived through such contract or contracts, and in establishing zones of benefit, there shall be taken into account the following:

(a) Improvement in the underground water supply.

(b) The contribution to the underground water supply by water made available independently of the agency.

(c) The adequacy of the water supply made available independently of the agency.

(d) The prospective need for a water supply.

(e) Extractions from the underground water supply in excess of contributions.

(f) The economic impact resulting from the water supply made available under such contract or contracts; provided, that areas not receiving a surface water supply or an improvement in the underground water supply by reason of such contract or contracts shall not be assessed pursuant to this subsection (f) of Section 14.2.

No assessment shall be levied under this Section 14.2 unless the board by resolution declares that it intends to do so and that a public hearing will be held thereon at a specified day, hour and place where all interested persons may appear and be heard. This resolution shall be published in the agency pursuant to Section 6063 of the Government Code in a newspaper of general circulation in the agency. The hearing may be adjourned from time to time at the discretion of the board and at its conclusion the board shall declare the zones of benefit established, if any, and the assessment, if any, to be levied hereunder. Assessments made within zones of benefit pursuant to this Section 14.2 shall be levied on all taxable property within such zone of benefit on an ad valorem basis.

§ 14.3. Formation of improvement districts, and issuance of bonds, levy and collection of taxes: Projects for which districts may be formed

Improvement districts may be formed to undertake projects to investigate, study, analyze, appraise, finance, acquire, and carry out any of the objects or purposes of this act of special benefit to such improvement districts, including, without limitation, projects to construct, operate, maintain, extend, repair or improve any works or improvement of special benefit to such improvement districts.

§ 14.4. Same: Resolution initiating formation proceedings: Contents

The formation of an improvement district shall be instituted by a resolution of the board which shall contain the following:

(a) A description of the boundaries of the improvement district proposed to be formed;

(b) A brief general description of the project to be undertaken within such improvement district;

(c) A finding that the project will be a special benefit to such improvement district;

(d) A statement of the board's intention to undertake the project;

(e) An estimate of the cost of the project;

(f) The method by which the project is proposed to be financed. To the extent that the project is to be financed by taxes levied in such improvement district, for purposes other than the payment of the principal of and interest on bonds, the proposed maximum amount of such tax which may be levied in any year. Also, if the board intends to finance any part of the project by ground water charges as provided for in Sections 14.20 through 14.37, inclusive, a statement of such intention, and the proposed maximum ground water charge for each class of water which may be levied in any year;

(g) The time and place for a hearing by the board on the formation of the proposed improvement district, on the boundaries thereof, on the project proposed to be undertaken therein and on the method by which the project is proposed to be financed.

§ 14.5. Same: Notice of time and place of hearing

Notice of the time and place of the hearing shall be published pursuant to Section 6063 of the Government Code in a newspaper of general circulation within the proposed improvement district, but if there is no such newspaper, then one within the agency. The notice shall contain a copy of the resolution and a designation of a public place within the agency where a copy of a map of the proposed improvement district may be seen by any interested persons.

§ 14.6. Same: Hearing: Time and place: Considering objections: Right to participate in proceedings

At the time and place fixed for the hearing, or at any time and place to which the hearing is adjourned, the board shall proceed with the hearing and shall consider all written and oral objections to any matters set forth in the resolution. Any person may appear at the hearing and present any matters material to the subject thereof.

§ 14.7. Same: Majority protest terminating proceedings: Limitation on time for instituting subsequent proceedings

If prior to the conclusion of the hearing written protests against the formation of the proposed improvement district and the proposed project signed by a majority in number of the holders of title to taxable property within the proposed improvement district and who are also the holders of title to not less than 51 percent of the area thereof are filed with the board, further proceedings relating to the proposed

improvement district and the proposed project shall be terminated and no proceedings for the formation of any improvement district to undertake the proposed project shall be instituted for a period of not less than six months following the date of the conclusion of the hearing.

§ 14.8. Same: Evidentiary effect of assessment roll in determining property ownership, etc., for majority protest

In all matters referred to in Section 14.7, the last equalized assessment roll of the county shall be prima facie evidence as to the ownership of taxable property, the names and numbers of the persons who are holders of title, or assessable rights therein, and as to the assessed valuation of taxable property within the proposed improvement district. Holders of title to undivided interests in taxable property may sign such protests and undivided interests shall be counted as though they were separate interests. If the assessment rolls fail to indicate the extent of any undivided interest, the holders of title whose undivided interests are not specifically defined, shall have, for purposes of protests referred to in Section 14.7, equal shares therein. No person, entity, or group of multiple owners, owning two or more properties or interests, shall qualify more than once as a holder of title.

§ 14.9. Same: Exclusion of lands from proposed district on resolution of governing body of existing district

The board shall exclude from the proposed improvement district all the lands of any district, not lying wholly within any other district within the agency that is also a city, unless prior to the conclusion of the hearing such district files with the secretary of the board a resolution adopted by a majority vote of the governing body of said district in the proposed improvement district.

§ 14.10. Same: Resolution declaring formation of district: Prerequisite finding

At the conclusion of the hearing if proceedings relating to the proposed improvement district have not been terminated in the manner set forth in Section 14.7 the board may, after excluding any land which it finds will not be benefited by the proposed project and any land required to be excluded pursuant to Section 14.9 and if it finds and determines that the project is feasible, economically sound and for the best interests of the agency and the proposed improvement district, declare, by resolution, that the proposed improvement district is formed.

§ 14.11. Same: Contents of resolution declaring district formed

The resolution declaring an improvement district to be formed shall contain:

(a) A description of the boundaries thereof and the name of such improvement district which shall thereupon constitute and be known as "Improvement District No. . . . of Kern County Water Agency."

(b) A brief description of the project which may be undertaken within the improvement district.

(c) The maximum amount of any improvement district tax, exclusive of taxes for the payment of principal and of interest on bonds, which may be levied in any year, which maximum amount shall not exceed the amount estimated in the resolution adopted pursuant to Section 14.4.

(d) If the levying of ground water charges is to be authorized in the improvement district pursuant to Sections 14.20 through 14.37, inclusive, a statement to that effect, and the maximum ground

water charge for each class of water which may be levied in any year, which maximum charges shall not exceed the maximums proposed in the resolution adopted pursuant to Section 14.4.

§ 14.12. Same: Boundaries, and land included in district: Additional lands on petition for inclusion

Except as limited by Section 14.9, the boundaries of an improvement district determined and established by the board in the resolution declaring the improvement district to be formed may be the whole or a part of the proposed improvement district described in the resolution adopted pursuant to Section 14.4 and may include such additional lands, the owners of which have, by written petition filed with the board, requested to be included within the improvement district. Also, except as limited by Section 14.9, the territory of an improvement district need not be contiguous, may include either or both incorporated and unincorporated lands, may include lands within any member units and lands within any other improvement district, but must be entirely within the agency.

§ 14.12a. Effective date of resolution

Except as provided in Section 14.12b, the resolution declaring the improvement district to be formed shall become effective 30 days after its adoption.

§ 14.12b. Petition protesting adoption of resolution: Election: When section not applicable

If a petition protesting against the adoption of the resolution declaring the improvement district to be formed is presented to the board prior to the effective date of the resolution, the resolution shall be suspended and the board shall reconsider it. The petition shall be signed by not less than 10 percent of the registered voters within the proposed improvement district on the date of adoption of the resolution. If the board does not repeal the resolution against which a petition is filed, the board shall submit the resolution to the voters within such improvement district at a regular election or a special election for the purpose. The resolution shall not become effective unless and until a majority of the voters voting at such election vote in favor thereof.

The board shall provide for holding such special election on the day so fixed and in accordance with the provisions of the Elections Code so far as the same shall be applicable, except as herein otherwise provided. Notice of the holding of such election shall be given by publishing the resolution calling the election pursuant to Section 6066 of the Government Code prior to the date of the proposed election, in at least one newspaper of general circulation within the proposed improvement district not less than two weeks prior to the date of the proposed election. No other notice of such election need be given. The returns of such election shall be made, the votes canvassed by the board within seven days following the election, and the results thereof ascertained and declared in accordance with the provisions of the Elections Code so far as they may be applicable, except as in this act otherwise provided. The secretary of the board, as soon as the result is declared, shall enter in the records of such board a statement of such results. No irregularities or informalities in conducting such election shall invalidate the same, if the election shall have otherwise been fairly conducted. The provisions of this section shall not apply in either of the following situations:

(1) The board of directors, by five-sevenths vote, finds and declares, in the resolution declaring the improvement district formed, that the proposed project consists of emergency work necessary in order to protect life or property from impending flood damage, in which event the resolution declaring the improvement district formed shall become effective immediately upon its adoption

(2) The resolution declaring the improvement district formed states that all or a portion of the proposed project is to be financed by general obligation bonds to be authorized pursuant to Section 15 of this act.

§ 14.12c. Inclusion of additional lands in improvement district

After the formation of an improvement district, additional lands may be included therein upon the written petition of the owners thereof and a resolution of the board.

§ 14.13. Same: Power, and proceedings for authorization, issuance, and sales of bonds on behalf of district

After the formation of an improvement district if any portion of the cost of the project proposed therefore is to be financed by the issuance of bonds by the agency on behalf of the improvement district, proceedings may be taken by the board for the authorization, issuance, and sale of bonds of the agency on behalf of the improvement district pursuant to Sections 15, 15.1, 15.2, 15.3, 15.4, 15.5, 15.6, 15.7, 15.8, 15.9, 16 and 17 of this act.

§ 14.14. Same: Power to cause taxes to be levied and collected in district

Subject to such limitations as may be contained in the resolution declaring the improvement district to be formed, the board shall have the power in any year to cause taxes to be levied and collected in any improvement district to finance any project of such improvement district or to pay the principal of an interest on bonds issued by the agency on behalf of such improvement district for the purpose of financing any project in such improvement district, and to pay the costs of administration, maintenance, and operation of any works or facilities of or for said improvement district.

§ 14.15. Same: Procedure for levying and collecting taxes in district

The procedure for levying and collecting taxes in any improvement district shall be the same as that provided for in this act for the levying and collecting of agency taxes.

§ 14.16. Same: Authorized expenditures of taxes collected: Surplus transferable to funds

All the taxes collected pursuant to Section 14.14 of this act shall be expended only for the payment of bond principal and interest or only for the improvement district projects for which levied, except that any surplus tax proceeds levied otherwise than for payment of bond principal and interest which remain after the completion of any improvement district project for which levied shall be transferred to the bond interest and redemption fund of such improvement district, if any, otherwise to the agency's general fund.

§ 14.17. Same: Properties in district deemed equally benefited or tax purposes

For the purpose of any tax levied under Section 14.14 of this act the properties within any improvement district shall be deemed to be equally benefited.

§ 14.18. Annual benefit assessment

(a) Subject to the provisions of Section 14.19, the board may, by resolution adopted after notice and public hearing, determine and propose for adoption an annual assessment on real property within an improvement district sufficient to cover the cost of any work or improvement or purpose for

which the improvement district was formed or to pay for the cost of the maintenance, operation, and administration of such work, improvement, or purpose, except that the board shall not impose an assessment upon a federal or state governmental agency or another local agency.

(b) The benefit assessment shall be imposed against parcels of real property on the basis of the estimated benefits to be derived by the property from the work or improvement or purpose for which the assessment is levied or the maintenance, operation, and administration of such work, improvement, or purpose.

(c) Whenever a railroad, gas, water, or electric utility right-of-way or electric line right-of-way is included within an area proposed to be assessed, the railroad, gas, water, or electric utility right-of-way or electric line right-of-way shall be subject to the assessment only if, and to the extent that, it is found that it will benefit from the service, and the railroad, gas, water, or electric utility right-of-way or electric line right-of-way shall be subject to the same penalties, and the same procedure and sale, in the event of delinquencies, as other parcels in the assessment area. In determining whether or not the railroad, gas, water, or electric utility right-of-way or electric line right-of-way benefits from the services provided, its use as a right-of-way for a railroad, gas, water, or electric utility shall be presumed to be permanent.

(d) For the first fiscal year in which a benefit assessment is proposed to be imposed pursuant to this section, the board shall cause a written report to be prepared and filed with the clerk of the agency which shall contain all of the following information:

(1) A description of the service proposed to be financed through the revenue derived from the assessment.

(2) A description of each lot or parcel of property proposed to be subject to the benefit assessment. The assessor's parcel number shall be a sufficient description of the parcel.

(3) The amount of the proposed assessment for each parcel.

(4) The basis and schedule of the assessment.

(e) The clerk shall cause notice of the filing of the report and of a time, date, and place of hearing thereon to be published pursuant to Section 6066 and posted in at least three public places within the jurisdiction of the agency.

(f) At the hearing, the board shall hear and consider all protests. At the conclusion of the hearing, the board may adopt, revise, change, reduce, or modify the proposed assessment. The board shall make a determination upon the assessment as described in the report or as determined at the hearing, and shall, by resolution, determine the proposed assessment.

(g) The proposition shall be submitted to the eligible voters within the improvement district and shall take effect upon approval of two-thirds of the voters voting on the proposition.

(h) The board may annually thereafter determine the cost of the service which is financed by the assessment and, by resolution, determine and impose the assessment.

(i) The board may provide for the collection of the assessment in the same manner, and subject to the same penalties and priority of lien, as other charges and taxes fixed and collected by or on

behalf of the agency, except that, if for the first year the assessment is levied the real property on which the assessment is levied has been transferred or conveyed to a bona fide purchaser for value, or if a lien of a bona fide encumbrancer for value has been created and attaches thereon, prior to the date on which the first installment of county taxes would become delinquent, the confirmed assessment shall not result in a lien against the real property but shall be transferred to the unsecured roll.

(j) If the assessments are collected by the county, the county may deduct its reasonable costs incurred for the service before remittal of the balance to the agency's treasury.

§ 14.19. Same: improvement districts formed prior to effective date of § 14.18

(a) For an improvement district formed prior to the effective date of Section 14.18, the board shall not impose a benefit assessment on real property within the improvement district unless the board first adopts an amendment to the resolution pursuant to which the improvement district was formed authorizing the board to impose such benefit assessments. No such amendment shall be adopted by the board until after the board has held a public hearing. The hearing shall be held and notice thereof shall be given substantially in accordance with the provisions of Sections 14.5 and 14.6. If, prior to the conclusion of the hearing, the board receives a majority protest to the proposed resolution substantially in accordance with the provisions of Sections 14.7 and 14.8, the proceedings shall be terminated and no further proceedings shall be instituted for that purpose for a period of one year.

(b) For an improvement district formed after the effective date of Section 14.18, the board shall not impose a benefit assessment on real property within the improvement district unless the board has been authorized to impose such benefit assessment by both the resolution initiating the formation of the improvement district as required by Section 14.4 and the resolution forming the improvement district.

§ 14.20. Power to levy and collect ground water charges for production from ground water supplies: Prerequisite authorization: Description of territory excluded

The board shall have the power, in addition to the powers enumerated elsewhere in this act, to levy and collect ground water charges for the production of water from ground water supplies within any improvement district which will benefit from the recharge of underground water supplies or the distribution of imported water in such improvement district; provided, that the levying of such charges has been authorized in such improvement district in the resolution adopted pursuant to Section 14.11 declaring the formation of such district; provided further, that no ground water charges shall be levied or collected in that portion of Kern County east of the following described line:

Beginning at the intersection of the West boundary of Rancho La Liebre and the South line of Kern County; thence Northeasterly along the boundary of Rancho La Liebre to the point where said boundary intersects the West line of Section 1, T9N, R17W, SBB&M; thence North along the West line of said Section 1 to a point on the South line of Section 36, T1ON, R17W, SBB&M; thence East to the Southeast corner of said Section 36,T1ON R17W, SBB&M; thence Northerly to a point on the West line of Section 19, TllN, R16W, said point being where the West line of said Section 19, TllN, R16W, SBB&M intersects a point on the Southerly and Easterly boundary of Rancho El Tejon; thence Southeasterly along the line of Rancho El Tejon to Corner No. 9 of Rancho El Tejon, said corner-being in the West one-half of said Section 19; thence Northeasterly along the East line of Rancho El Tejon to Corner No. 10 of said Rancho, said point also being in the West one-half of said Section 19, TllN,

R16W, SBB&M; thence Northwesterly along the line of Rancho El Tejon to Corner No. 11 of said Rancho El Tejon, said point which falls in the Southeast one-quarter of Section 3, T11N, R17W, SBB&M; thence continuing Northwesterly along the line of Rancho El Tejon to Corner No. 12 of said Rancho El Tejon, which point also falls on the West line of Section 28, T12N, R17W, SBB&M; thence North along the West line of said Section 28, T12N, R17W, SBB&M, to a point on the South line of Section 36, T32S, R30E, MDB&M; thence East to the Southeast corner of said Section 36, T32S, R30E, MDB&M; thence North to a point on the East line of Section 24, T31S, R30E, MDB&M where the East line of said Section 24 intersects the boundary line of Rancho El Tejon; thence Northeasterly along the boundary of Rancho El Tejon to Corner No. 15 of Rancho El Tejon, said point also being in Section 34, T30S, R31E, MDB&M; thence Northwesterly along the boundary line of Rancho El Tejon passing through Corner No. 16 of said Rancho El Tejon to Corner No. 17 of said Rancho El Tejon, said point also being the Southeast corner of Section 1, T30S, R30E, MDB&M: thence Northerly to the Northeast corner of Section 1, T29S, R30E, MDB&M: thence Easterly to the Southeast corner of Section 36, T28S, R30E, MDB&M: thence Northerly to the Northeast corner of Section 1, T28S, R30E, MDB&M: thence Westerly to the Southwest corner of Section 31, T27S, R28E, MDB&M; thence Northerly to the Northwest corner of Section 6, T25S, R28E, MDB&M; also being a point on the North line of Kern County.

§ 14.21. Definitions used in connection with ground water charge

As used in connection with the ground water charge, the following words shall have the following respective meanings:

"Person," "owner" or "operator" means federal, state, and local public agencies, private corporations, firms, partnerships, individuals or groups of individuals, whether legally organized or not; "owner" or "operator" also means the person to whom a water-producing facility is assessed by the county assessor, or, if not separately assessed, the person who owns the land upon which a water-producing facility is located.

"Ground water" means all water beneath the earth's surface, whether or not flowing through known and definite channels.

"Production" or "producing" means the extraction or extracting of ground water, by pumping or any other method, from shafts, tunnels, wells (including, but not limited to, abandoned oil wells), excavations or other sources of such ground water, for domestic, municipal, irrigation, industrial, or other use, except that such terms shall not mean or include the extraction of ground water produced in the construction or reconstruction of a well, or water incidentally produced with oil or gas in the production thereof, or water incidentally produced in a bona fide mining or excavating operation or water incidentally produced in the bona fide construction of a tunnel.

"Water-producing facility" means any device or method, mechanical or otherwise, for the production of water from the ground water supplies within the improvement district.

"Water year" means July 1 of one calendar year to June 30 of the following calendar year.

"Agricultural water" means water first used on lands in the production of plant crops or livestock for market.

§ 14.22. Resolution of intention to establish ground water charge: Publication

Prior to the establishment of any ground water charge in an improvement district, the board shall adopt a resolution stating its intention to do so, designating the improvement district in which it is proposed that such charges be levied, and requiring the registration of all water producing facilities located within such improvement district as provided in Section 14.24 of this act. Said resolution shall be published once a week for three successive weeks in a newspaper of general circulation published in the agency.

§ 14.23. Declaration of purpose of ground water charge levies: Authorized uses of proceeds

Ground water charges levied pursuant to this act are declared to be in furtherance of agency activities in the protection and augmentation of the water supplies of the improvement district which are necessary for the public health, welfare and safety of the people of this state. The ground water charges are authorized to be levied upon the production of ground water from all water-producing facilities, whether public or private, within said improvement district for the benefit of all who rely directly or indirectly upon the ground water supplies and water imported into such improvement district.

The proceeds of ground water charges levied and collected upon the production of water from ground water supplies within such improvement district are authorized and shall be used exclusively by the board for the following purposes:

(a) To pay the costs of acquiring, constructing, maintaining and operating facilities which will import water into the agency which will benefit such improvement district including payments made under any contract between the agency and the State of California, the United States of America, or any public, private or municipal utility.

(b) To pay the costs of purchasing water for importation into the agency which will benefit such improvement district, including payments made under any contract with the State of California, the United States of America, or any public, private or municipal utility; provided, that the costs of cloud seeding and weather modification activities shall not be deemed to be costs of purchasing water for importation.

(c) To pay the costs of acquiring, constructing, maintaining and operating facilities which will provide for ground water recharge or which will measure ground water extractions.

(d) To pay any administrative costs and the principal or interest of any bonded indebtedness or other obligations incurred by the agency on behalf of such improvement district or districts for any of the purposes set forth in subdivisions (a), (b) and (c) of this section.

§ 14.24. Required registration of water-producing facilities located within improvement district following resolution of intent: Penalty for failure to register: Information required in registration

Within six months after the last date of publication of the resolution provided for in Section 14.22 stating the board's intent to establish a ground water charge in an improvement district, all water-producing facilities located within the boundaries of such improvement district shall be registered with the agency by the owner or operator thereof on forms provided by the agency and, if required by the board, equipped with a water-measuring device satisfactory to the agency installed by the agency or at the agency's option by the operator thereof. Any new water-producing facility, constructed or reestablished, or any abandoned water-producing facility, which is reactivated, after such date, shall be registered with the

agency, and if required by the board, equipped with a water-measuring device satisfactory to the agency within 30 days after the completion or reestablishment thereof.

Failure to register any water-producing facility, as required by this act, is a misdemeanor punishable by a fine of not to exceed five hundred dollars ($500), or imprisonment in the county jail for not to exceed six months, or by both such fine and imprisonment.

In addition to other information which the agency may determine is necessary and may require in the registration form provided, there shall also be given information as to the owner or owners of the land upon which each water-producing facility is located, a general description and location of each water-producing facility, the name and address of the person charged with the operation of each water-producing facility, and the name or names and addresses of all persons owning or claiming to own an interest in the water-producing facility.

§ 14.25. Annual report by agency engineer: Information to be included

After adoption of the resolution provided for in Section 14.22, the agency engineer shall annually prepare a report which shall include, among other matters which the agency may desire, information on the availability of surface and ground water in the improvement district, the quantity of water needed for surface delivery and for replenishment of the ground water supplies within the improvement district for the ensuing water year, the amount of water which the agency is obligated to purchase for use in the improvement district during the ensuing water year and an estimate of the amount of ground water to be extracted within the improvement district during the ensuing water year.

§ 14.26. Provisions governing delivery, publication, etc., of engineering report: Notice of hearing and hearing: Findings and determinations by board

The annual engineering report required by Section 14.25 for a given year shall be delivered to the secretary of the board in writing on or before February 1st of the succeeding year. Said secretary shall publish, pursuant to Section 6061 of the Government Code, a notice of the receipt of such report and of the public hearing to be held on the third Monday of March, in a newspaper of general circulation printed and published within the agency, at least 10 days prior to the date at which the public hearing regarding said engineering report shall be held. Said notice, among other information which the agency may provide therein, shall designate the place where such hearing shall be held and contain an invitation to all operators of water-producing facilities within the improvement district to call at the offices of the agency to examine said engineering report.

There shall be held by the board on the third Monday of March of each year a public hearing at which time any operator of a water-producing facility within the improvement district, or any person interested in the condition of the ground water supplies or the surface water supplies of the improvement district, may in person, or by representative, appear and submit evidence concerning the ground water conditions and the surface water supplies within the improvement district. Appearances also may be made supporting or protesting said written engineering report. The board shall, before the levy of the ground water charge, find and determine the estimated amount of agricultural water to be withdrawn from the ground water supplies of the improvement district for the ensuing water year; the amount of water other than agricultural water to be drawn from the ground water supplies of the improvement district for the ensuing water year; the estimated amount of water necessary for surface distribution in the improvement district for the ensuing water year; and the amount of water the district is obligated by contract to purchase. Said findings and determinations by the board shall be conclusive and binding upon all persons and parties.

§ 14.27. Determination as to levy of ground water charge: Levy and assessment: Computation of rates: Charge as additional to other taxes or assessments: Effect of clerical errors

Within 30 days from the close of said hearing, the board shall determine whether or not a ground water charge should be levied in such improvement district or districts. If the board determines that a ground water charge or charges should be so levied, it shall levy, assess, and affix such charge or charges against all persons operating ground water-producing facilities within such improvement district or districts during the ensuing water year. The charges shall be computed at a fixed and uniform rate per acre-foot for agricultural water and at a fixed and uniform rate per acre-foot for all water other than agricultural water; provided, that the ground water charge for one class of water shall not exceed twice that for any other class of water; provided, further, that with respect to small water-producing facilities which have a discharge opening not greater than a size specified by the board and which do not provide water for an area in excess of that specified by the board, for administrative convenience the board may provide for either a flat annual charge or for no charge in lieu of a charge computed at such fixed and uniform rates. Different rates may be established for different improvement districts; provided, however, that in each improvement district the rate for agricultural water shall be fixed and uniform and the rate for water other than agricultural water shall be fixed and uniform.

Any ground water charge levied pursuant to this section shall be in addition to any other taxes or assessments, if any, levied within the agency or any improvement district or districts thereof.

Clerical errors occurring or appearing in the name of any person or in the description of the water-producing facility where the production of water therefrom is otherwise properly charged, or in the making or extension of any charge upon the records, which do not affect the substantial rights of the assessee or assessees, shall not invalidate the ground water charge.

§ 14.28. Notice of ground water charge levy: Mailing

The agency, after the levying of the ground water charge, shall give notice thereof to each operator or each water-producing facility in the improvement district or districts in which such charge or charges are levied as disclosed by the records of the agency, which notice shall state the rate for each class of water of the ground water charge applicable to said water-producing facility for each acre-foot of water to be produced during the ensuing water year. Said notice may be sent by postal card or by other first-class mail and with postage prepaid by the agency.

§ 14.29. Filing required by owner or operator of water-producing facility in district levying ground water charge: Contents: When charges due and payable: Penalty for failure to register, etc.: Employment of water measuring devices

After adoption of the resolution provided for in Section 14.22 for an improvement district in which a ground water charge may be levied, each owner or operator of a water-producing facility within said improvement district, until such time as said water-producing facility has been permanently abandoned, shall file with the agency, on or before the 31st day of January and on or before the 31st day of July in each year, a statement setting forth the total production in acre-feet of water for the preceding six-months period (excluding the month in which the statement is due), a general description or number locating each water-producing facility, the method or basis of the computation of such water production, and the amount of the ground water charge based on such computation. If no water has been produced from said water-producing facility during the preceding six-months period, said statement shall be filed as provided for herein, setting forth that no water has been produced during said period. Said statement shall be verified by a written declaration that it is made under the penalties of perjury. The ground water charge is

due and payable to the agency on or before the last day upon which the water production statements shall be filed, and is computed by multiplying the production in acre-feet of water for each classification as disclosed in the statement by the ground water charge for each classification of water. At such time as any said water-producing facility has been permanently abandoned, the operator thereof shall give written notice of such abandonment to the agency. If any operator of a water-producing facility shall fail to pay the ground water charge when due, the agency shall charge interest at the rate of one percent (1%) each month on the delinquent amount of the ground water charge.

Should any owner or operator of a water-producing facility fail to register each water-producing facility, or fail to file the water-production statements as required by this act, the agency shall, in addition to charging interest as provided herein, assess a penalty charge against such owner or operator in an amount of ten percent (10%) of the amount found by said agency to be due, except in those cases where payment in the proper amount has been made within the time required by this act and the failure to register the water-producing facility or to file the water-production statement within the time required by this act resulted, in the opinion of the board, from excusable and justifiable circumstances, in which case the board may reduce the penalty to an amount of not less than one percent (1%) of said amount found to be due.

When a water-measuring device is permanently attached to water-producing facility, the record of production as disclosed by such water-measuring device shall be presumed to be accurate and shall be used as the basis for computing the water production of said water-producing facility in completing the water-production statement, unless it can be shown that the water-measuring device is not measuring accurately.

When a water-measuring device is not permanently attached to a water-producing facility, the board may establish a method or methods to be used in computing the amount of water produced from such water-producing facilities.

Such methods may be based upon any, or all, or a combination of some of the following criteria: the minimum charge sufficient to cover administrative costs of collection, size of water-producing facility discharge opening, area served by the water-producing facility, number of persons served by the water-producing facility, use of land served by the water producing facility, crops grown on land served by the water-producing facility, or any other criteria which may be used to determine with reasonable accuracy the amount of water produced from such water-producing facility.

§ 14.30. Amended statement of water production or correction of records: Filing: Proviso

Upon good cause shown, an amended statement of water production may be filed or a correction of the records may be made at any time prior to the final date for filing the next semiannual water production statement; provided that if pursuant to Section 14.33, the owner or operator has been notified of a determination by the agency that the production of water from the water-producing facility is in excess of that disclosed by the sworn statement covering such water-producing facility, and such owner or operator fails to protest such determination in the manner and in the time set forth in Section 14.33, he shall be precluded from later filing an amended water production statement for that period for such water-producing facility.

§ 14.31. Record of water production and ground water charges: Preparation: Contents

The agency shall prepare each year for each improvement district in which a ground water charge is levied a record called "The Record of Water Production and Ground Water Charges, Improvement

District No. . . ." in which shall be entered a general description of the property upon which each water-producing facility is located, an identifying number or code which is assigned to such facility, the annual water production for each class of water produced from each water-producing facility, and the ground water charge for each class of water.

§ 14.32. Temporary restraining order against operator failing to register or delinquent in payments: Injunction: Service of process: Nature of right of injunctive relief

The superior court of the county in which the agency lies may issue a temporary restraining order upon the filing by the agency with said court of a petition or complaint setting forth that the person named therein as defendant is the operator of a water-producing facility which has not been registered with the agency or that such defendant is delinquent in the payment of a ground water charge. Such temporary restraining order shall be returnable to said court on or before 10 days after its issuance.

The court may issue and grant an injunction restraining and prohibiting the named defendant from the operation of any water-producing facility when it is established at the hearing that the defendant has failed to register such water-producing facility with the agency or that the defendant is delinquent in payment of ground water charges thereon. Such court may provide that the injunction so made and issued shall be stayed for a period not to exceed 10 days to permit the defendant to register the water-producing facility or to pay the delinquent ground water charge.

Service of process is completed by posting a copy of the summons and complaint upon the water-producing facility or the parcel of land upon which it is located and by personal service upon the named defendant.

The right to proceed for injunctive relief granted herein is an additional right to those which may be provided elsewhere in this act or otherwise allowed by law. The procedure provided in Chapter 3 (commencing with Section 525), Title 7, Part 2 of the Code of Civil Procedure, regarding injunctions shall be followed except insofar as it may herein be otherwise provided. The agency shall not be required to provide an undertaking or bond as a condition to granting injunctive relief.

§ 14.33. Production of water in excess of sworn statements: Investigation and report: Determination by agency: Notice to operator

If the agency has probable cause to believe that the production of water from any water-producing facility is in excess of that disclosed by the sworn statements covering such water-producing facility, or if no statements are filed covering any water-producing facility, the agency may cause an investigation and report to be made concerning the production of water from each such water-producing facility. The owner or operator of each such water-producing facility shall furnish to the agency from time to time, as may be required by the agency, the records, notices or bills, or duplicates thereof, respecting the amount of electric power used in operating such facility, as received by such owner or operator from the utility or entity which furnishes such electric power. The agency may fix the amount of water production from any such water-producing facility at an amount not to exceed the maximum production capacity of such water producing facility; provided, however, where a water-measuring device is permanently attached thereto, the record of production, as disclosed by such water-measuring device, shall be presumed to be accurate.

After such determination has been made by the agency, a written notice thereof shall be mailed to the person operating such water-producing facility at his address as shown by the agency's records. Any such determination made by the agency shall be conclusive on all persons having an interest in such water-producing facility, and the ground water charge, interest and penalties thereon, shall be paid

forthwith, unless such person files with the board within 10 days after the mailing of such notice, a written protest setting forth the ground or grounds for protesting the amount of production so fixed.

Upon the filing of such protest, the board thereafter shall hold a hearing at which time the total amount of the water production and the ground water charge thereon shall be determined, which shall be conclusive if based upon substantial evidence. If the water-production statement was filed and the amount disclosed thereon was paid within the time required by this act, and the board finds that the failure to report the amount of water actually produced resulted from excusable or justifiable circumstances, the board may waive the charge of interest on the amount found to be due. A notice of such hearing shall be mailed to the protestant at least 10 days before the date fixed for the hearing. Notice of the determination by the board shall be mailed to each protestant, who shall have 20 days from the date of mailing to pay the ground water charge, interest or penalties provided by the provisions of this act.

Notice as required in this section shall be given by deposit thereof in any postal facility regularly maintained by the government of the United States in a sealed envelope with postage paid, addressed to the person on whom it is served at his address as disclosed by the records of the agency. The service is complete at the time of deposit.

§ 14.34. Action for collection of delinquent ground water charges: Recovery allowable: Provisions governing attachment on proceeding

The agency may bring a suit in the court having jurisdiction against any operator of a water-producing facility within the agency for the collection of any delinquent ground water charge. The court having jurisdiction of said suit may, in addition to allowing recovery of costs to said agency as allowed by law, fix and allow as part of the judgment interest and penalties as provided in Section 14.29. Should the agency, as a provisional remedy in bringing such suit, seek an attachment against the property of any named defendant therein, the agency shall not be required to provide a bond or undertaking as is otherwise provided for in Chapter 4 (commencing with Section 537), Title 7, Part 2, of the Code of Civil Procedure.

§ 14.35. Violation: Penalty

It shall be unlawful to produce water from any water-producing facility required to be registered pursuant to the terms of this act unless such water-producing facility has been registered with the agency within the time required by the provisions of this act and, if required by the board, has a water-measuring device affixed thereto capable of registering the accumulated amount of water produced therefrom. Violation of this provision shall be punishable by a fine not to exceed five hundred dollars ($500), or imprisonment in the county jail for not to exceed six months, or by both such fine and imprisonment. Each day of operation in violation hereof shall constitute a separate offense.

§ 14.36. Tampering, etc., with water-measuring device: Failure to file water-production statement, etc.: Declaration of misdemeanor: Punishment

Any person who injures, alters, removes, resets, adjusts, manipulates, obstructs or in any manner interferes or tampers with or procures or causes or directs any person to injure, alter, remove, reset, adjust, manipulate, obstruct or in any manner interfere or tamper with any water-measuring device affixed to any water-producing facility as required by this act, so as to cause said water-measuring device to improperly or inaccurately measure and record said water production, or any person who willfully does not file with the agency a water-production statement as prescribed and within the time required by this act, or any person who willfully removes or breaks a seal attached to an abandoned water-producing

facility, or any person who with intent to evade any provision or requirement of this act files with the agency any false or fraudulent water-production statement is guilty of a misdemeanor and is punishable by a fine not to exceed five hundred dollars ($500), or imprisonment in the county jail not to exceed six months, or by both such fine and imprisonment.

§ 14.37. Additional powers for implementing enforcement of provisions of act
In implementing the enforcement of the provisions of this act relating to ground water charges, the agency shall have the power, in addition to the powers enumerated elsewhere in this act:

(a) To install and maintain water-measuring devices, and other devices which will aid in determining accurate water production, on water-producing facilities not owned by the agency.

(b) To affix seals to water-producing facilities which the owner or operator thereof has declared to be abandoned, or are in fact permanently abandoned.

(c) To enter onto any land for the purposes enumerated in this section and for the purpose of making investigations relating to water production.

§ 15. Bonded indebtedness: Resolution: Election

(a) Whenever the board determines that a bonded indebtedness should be incurred to pay the cost of any work of improvement for the benefit of any member unit, as determined in any agreement between the agency and the member unit, or for the benefit of any improvement district, it may determine and declare by resolution the amount of bonds necessary to be issued in each such member unit or improvement district affected for such work of improvement. The board shall cause a copy of the resolution duly certified by the clerk to be filed for record in the office of the Recorder of Kern County if the improvement is for the benefit of an improvement district and with the governing board of such member unit if the improvement is for the benefit of any member unit.

(b) After such resolution has been filed, the board shall call a special bond election in each said member unit or improvement district to submit to the qualified electors of each such member unit or improvement district the question whether or not bonds shall be issued in the amount and for the purposes stated in the resolution.

(c) The special bond election shall be called by ordinance and the board shall submit to the qualified electors of each member unit or improvement district, the proposition of incurring a bonded debt in the member unit or member units or improvement district in the amount and for the purposes stated in the resolution and shall recite therein the purposes for which the indebtedness is proposed to be incurred, except that it shall be sufficient to give a brief, general description of such purposes, and refer to the copy of the resolution on file with the office of the Recorder of Kern County or with the governing body of the member unit. The ordinance may state that no bonds authorized at the election will be sold until contracts have been executed with member units within the area to be benefited by the improvement which will provide for payments by such member units to the agency sufficient to pay the principal and interest on any such bonds issued. If such a provision is included in the ordinance, no bonds authorized at the election shall be issued until such contracts have been executed. The ordinance shall also state the estimated cost of the proposed work and improvements, the amount of the principal of the indebtedness to be incurred there for, and the maximum rate of interest to be paid on the indebtedness and shall fix the date on which the special election shall be held, and the form and contents of the ballot to

be used. The rate of interest to be paid on the indebtedness shall not exceed six and one-half percent (6 1/2%) per annum. For the purposes of the election, the board shall establish special bond election precincts within the boundaries of each member unit or improvement district and may form election precincts by consolidating the precincts established for general elections in the agency, not to exceed six general precincts for each such special bond election precinct. In addition, the ordinance shall designate a polling place and appoint one inspector, one judge and one clerk for each special bond election precinct.

The special bond election shall be held as nearly as practicable in conformity with the general election laws of the state except as otherwise provided in this act.

The board shall cause a map or maps to be prepared covering a general description of the work to be done, which map shall show the location of the proposed works and improvements and shall cause the map to be posted in a prominent place in the office of the agency and the office of the governing body of the member unit affected, if such bonds are for an improvement for the benefit of any member unit, for public inspection at least thirty (30) days before the date of the election.

Said ordinance calling for the special bond election shall be published prior to the date set for such election in a newspaper of general circulation, circulated in the improvement district or member unit or member units affected for six consecutive times if published in a daily newspaper of general circulation, or two times if published in a weekly newspaper of general circulation. The last publication of the ordinance must be at least fourteen (14) days before the election, and if there be no such newspaper, then the ordinance shall be posted in five public places designated by the board in the improvement district and in each said affected member unit for at least thirty (30) days before the date of the election. No other notice of election need be given nor need polling place cards be issued.

Any defect or irregularity in the proceedings prior to the calling of the special bond election shall not affect the validity of the bonds authorized by said election. If at such election three-fifths (3/5) of the votes cast are in favor of incurring such bonded indebtedness, then bonds for such improvement district or member unit for the amount stated in the proceedings shall be issued and sold as provided in this act.

§ 15.1. Form, terms, etc., of bonds

The board shall prescribe by resolution the form of the bonds which shall include a designation of the improvement district or member units affected, and the form of the interest coupons attached to the bonds. Said bonds shall be payable annually or semiannually, at the discretion of the board, at a day and at a place designated in the bonds, together with the interest on all sums unpaid on such date until the whole of said indebtedness is paid.

The board may divide the principal amount of any issue into two or more series, and fix different dates for the bonds of each series. The bonds of one series may be made payable at different times from those of any other series. The maturity of each series shall comply with this section. The board may fix a date, not more than five years from the date of issuance, for the earliest maturity of each issue or series of bonds. The final maturity date shall not exceed forty (40) years from the time of incurring the indebtedness evidenced by each issue or series.

The bonds shall be issued in such denominations as the board may determine, and shall be payable on the days and at the place fixed in said bonds, and with interest at the rate specified in such bonds, which rate shall not be in excess of six and one-half percent (6 1/2%) per annum, and shall be made payable annually or semiannually, and said bonds shall be numbered consecutively and shall be signed by the chairman of the board, and countersigned by the secretary of said agency and the seal of said agency shall be affixed thereto by the secretary of the board. Either or both such signatures may be printed, engraved or lithographed. The interest coupons of said bonds shall be numbered consecutively and signed by the said secretary by his printed, engraved, or lithographed signature. In case any such officer whose signatures or countersignatures appear on the bonds or coupons shall cease to be such officer before the delivery of such bonds to the purchaser, such bonds and coupons, and signatures or countersignatures shall nevertheless be valid and sufficient for all purposes the same as if such officer had remained in office until the delivery of the bonds.

§ 15.2. Same: Call or redemption

Such bonds may be callable upon such terms, conditions, and upon such notice as the agency may determine, and upon the payment of such premium as may be fixed by the agency in the proceedings for the issuance of the bonds. No bond is subject to call or redemption prior to its fixed maturity date unless the right to exercise such call is expressly stated on the face of the bond.

§ 15.3. Sale of bonds

Such bonds may be sold at either public or private sale. The agency may fix terms and conditions for the sale or other disposition of any authorized issue of bonds.

§ 15.4. Source of payment of bond costs, expenses, and interest

All costs and expenses incident to the issuance and sale of bonds may be paid out of the proceeds of the sale of the bonds. Interest on bonds may be paid out of the proceeds of the sale of the bonds during the actual construction of any works for the acquisition, construction or completion of which the bonds have been issued, and for a period of not to exceed two (2) years thereafter as provided for in the indenture.

§ 15.5. Provision for replacement of bonds

The agency may provide for the replacement of lost, destroyed or mutilated bonds, or coupons.

§ 15.6. Tax exemption of bonds

Such bonds and the interest or income therefrom are exempt from all taxation in this State other than gift, inheritance and estate taxes.

§ 15.7. Status of bonds as legal investments

Bonds issued and sold pursuant to Section 15 of this act are legal investments for all trust funds and for the funds of all insurance companies, bands, both commercial and savings trust companies, the state school funds, and any public or private funds which may be invested in county, municipal or school district bonds, and may be deposited as security for the performance of any act whenever the bonds of any county, municipality or school district may be so deposited.

§ 15.8. Issuance and sale of bonds at par value: Disposition of proceeds of sale

The board may issue and sell the bonds of such improvement district or member units at not less than par value, and the proceeds of the sale of such bonds shall be placed in the treasury of the agency to the credit of the respective improvement district or member units thereof, for the uses and purposes of the improvement district or member unit or member units voting said bonds; and the proper record of such transactions shall be placed upon the books of the agency, and said respective improvement district or member unit funds shall be applied exclusively to the purposes and objects mentioned in the ordinance calling such special bond election.

§ 15.9. Payment of bonds from tax or assessment revenue: Exemption of member unit

Any bonds issued pursuant to Section 15 of this act, and the interest thereon, shall be paid from revenue received from member units pursuant to any contracts which may be required with such member units by the ordinance passed pursuant to subdivision (c) of Section 15, and from revenue derived from any taxes levied pursuant to Section 14.1 to raise the amount of delinquencies, if any, of such member units on such contracts, to the extent that such revenues are available. To the extent that such revenues are or are estimated by the board to be insufficient to pay such bonds and interest or if no such contracts with member units are required by said ordinance, then any bonds issued pursuant to Section 15 of this act, and the interest thereon, shall be paid by revenue derived from an annual tax or assessment levied upon all taxable property, exclusive of mineral rights, within each improvement district or member unit for which such bonds were issued. No member unit nor the property therein nor other lands within the agency shall be liable for the share of bonded indebtedness of any other member unit or improvement district for which bonds are issued under this act, nor shall any moneys derived from taxation or assessments in any of the several member units or improvement districts be used in payment of principal and interest or otherwise of the share of the bonded indebtedness chargeable to any other improvement district or member unit.

§ 16. Undertaking work or improvement: Statutory provisions governing procedure: Meaning of terms, used in improvement acts, with reference to proceedings by water agency

Whenever in the opinion of the board the public interest or convenience may require, it may order any work or improvement which it is authorized to undertake to be done in accordance with the procedure and in pursuance of the provisions of either the Improvement Act of 1911, Division 7 (commencing at Section 5000) of the Streets and Highways Code, or the Municipal Improvement Act of 1913, Division 12 (commencing at Section 10000) of the Streets and Highways Code.

The following terms, as used in the aforesaid improvement acts, shall refer to that which is set out herein for the purposes of this act.

(a) "Municipality" or "city" refers to the agency;

(b) "City council" or "legislative body" refers to the board of directors of the agency;

(c) "City treasurer" or "treasurer" refers to the officer of the agency who has charge of and makes payment of the agency funds;

(d) "Mayor" refers to the president of the agency;

(e) "Clerk" refers to the secretary of the agency;

(f) "Council chambers" refers to the place where the regular meetings of the board of directors are held;

(g) "Superintendent of streets," or "street superintendent" and "city engineer" refer to the engineer of the agency;

(h) "Right-of-way" refers to any parcel of land through which a right-of-way has been granted to the agency for any purpose;

(i) All other words and terms relating to municipal officers and matters refer to the corresponding officers of the agency and matters under this act.

§ 17. Revenue bonds: Power of board: Application of Revenue Bond Law of 1941

If the board by resolution determines that a bonded indebtedness to pay for the acquisition or construction of any works for any purposes of the agency or for refunding any outstanding bonds should be incurred, and can be repaid and liquidated as to both principal and interest from revenues designated by the board, the agency is authorized and shall have the power to define such works as an "enterprise" and to issue revenue bonds all in the manner and as provided in the Revenue Bond Law of 1941, Chapter 6 (commencing at Section 54300) of Part 1 of Division 2 of Title 5 of the government Code and for such purpose the agency shall be considered a "local agency" as defined by Section 54307 of said code.

The board may issue revenue bonds under the Revenue Bond Law of 1941 on behalf of any portion of the agency created as an improvement district pursuant to this act and any election for the issuance of such revenue bonds shall be limited to the area of such improvement district.

§ 18. Certification of bonds as legal investment

All revenue bonds issued by the agency may be certified as legal investments pursuant to the Districts Securities Commission Law (Chapter 1 (commencing at Section 20000) of Division 10 of the Water Code).

§ 19. Conformity of improvement for which bonds are voted with report, plans, etc.: Changes in work: Issuance of additional bonds

Any improvement for which bonds are voted under the provisions of this act, shall be made in conformity with the report, plans, specifications and maps theretofore adopted unless the doing of any of such work described in said report shall be prohibited by law, or be rendered contrary to the best interest of the agency by some change of conditions in relation thereto, in which event the board may order necessary changes made in such proposed work of improvement, and may cause any plans and specifications to be made and adopted therefore.

Whenever bonds have been authorized and the proceeds of the sale thereof have been expended as authorized in this act and the board shall by resolution determine that additional bonds shall be issued for carrying out any of the purposes of this act, the board may again proceed as provided in this act, and submit to the qualified voters the question of issuing additional bonds in the same manner and with like procedures as provided in this act, and for the expenditure of the proceeds thereof, shall be deemed to apply to such issue of additional bonds.

Should a proposition for issuing bonds submitted at any election under this act fail to receive the requisite number of votes of the qualified electors voting at such election to incur the indebtedness the board shall not call or order, within six months after such election,- another election for incurring indebtedness and issuing bonds under this act for the same purpose.

§ 20. Absence of effect from repeal or amendment of act on obligations of bonds or indebtedness

The repeal or amendment of this act shall not in any way affect or release any of the property in the agency or any member unit thereof from the obligations of any outstanding bonds or indebtedness until all such bonds and outstanding indebtedness have been fully paid and discharged.

§ 21. Filing statement of creation of agency: Making of assessments and collection of taxes: Tax levy and transmission of statement of tax rates

On or before the first day of February next succeeding the effective date of this act, the board shall cause to be filed a statement of the creation of and the boundaries of the agency with the county assessor and with the State Board of Equalization in the manner provided by Chapter 8 (commencing at Section 549000 of Part 1 of Division 2 of Title 5 of the Government Code. Thereafter, all assessments shall be made for the agency by the State Board of Equalization and the county assessor, and all taxes shall be collected for the district by the county tax collector in the manner provided in this act.

The board shall, at the time of fixing the general tax levy, levy annually such taxes as are authorized by this act, and immediately thereafter transmit to the county auditor a statement of the rate or rates of taxes fixed by the board.

§ 21.1. Collection of agency's taxes with those of county: Payment of taxes collected to agency's treasurer: Adoption of alternative procedure of tax collection and apportionment

The agency's taxes so levied shall be collected with and not separately from taxes for county purposes. When collected the agency taxes shall be paid to the treasurer of the agency, under the general requirements and penalties provided by law for the settlement of other taxes. The agency may adopt the alternative procedure of tax collection and apportionment established by Chapter 3 (commencing at Section 4701) of Part 8 of Division 1 of the Revenue and Taxation Code and any amendments thereof; provided, however, that the agency may thereafter abandon said alternative procedure at the end of any fiscal year of the agency.

§ 21.2. Tax lien: Applications of general statutory provisions as to priority, time and manner of assessing, equalizing and collecting county property taxes: Liability of officers on official bond

All taxes levied under this act are a lien on the property on which they are levied. The provisions of law of this State, prescribing the priority, time and manner of assessing, equalizing and collecting county property taxes, including the sale of property for delinquency, and the redemption from such sale, and the duties of the several county officers with respect thereto, are hereby adopted for the agency and made a part hereof, so far as they are applicable and not in conflict with this act. Such officers shall be liable upon their official bond for the faithful discharge of the duties imposed by the provisions of this act.

§ 22. [Repealed by § 22.1]

§ 22.1. Same: Statutory provisions under which proceedings may be brought: Conclusiveness of board's findings or conclusions: Condition precedent to section's operation

An action to determine the validity of bonds or a contract may be brought, pursuant to Chapter 9 (commencing with Section 860) of Title 10 of Part 2 of the Code of Civil Procedure. In any such action all findings of fact or conclusions of the board upon all matters shall be conclusive unless the action was instituted within six months after the finding or conclusion was made.

This section shall become operative only if Assembly Bill No. 1412 is enacted by the Legislature at its 1961 Regular Session, and in such case at the same time as Assembly Bill No. 1412 takes effect; at which time Section 22 of this act is repealed.

§ 23. Preservation of existence, rights, powers, etc. of municipality, public district, etc., within territorial limits of agency

Neither the establishment of the agency nor any provision of this act shall affect, restrict nor supersede the existence, property, right, or power of any municipality, public district, or public agency now or hereafter established in or partially within the limits of the agency for the purpose of flood control, reclamation, conservation, storage, distribution, sale, use, or development of water. The legislature, because of conditions special to the county, hereby expressly declares its intent to permit within the limits of the Kern County Water Agency, the existence of more than one district, municipality or combination thereof, having similar powers over similar territory in regard to flood control, reclamation and water conservation, storage, distribution, sale, use or development.

§ 24. Preservation of vested rights in water

Neither the formation of the agency nor this act shall impair the vested right of any person, association, corporation, municipality or public district in or to any water or the use thereof.

§ 25. [Repealed by § 25.1]

§ 25.1. Same: Statutory provisions under which action may be brought: Condition precedent to section's operation

An action to determine the legality of existence of the agency may be brought pursuant to Chapter 9 (commencing with Section 860) of Title 10 of Part 2 of the Code of Civil Procedure. If such action is brought by the agency, the State of California shall be a defendant, and consent therefore is given. Service of summons therein shall be made on the Attorney General who shall appear in such action on behalf of the State in the same manner as with appearances in civil actions.

This section shall become operative only if Assembly Bill No. 1412 is enacted by the Legislature at its 1961 Regular Session, and in such case at the same time as Assembly Bill No. 1412 takes effect; at which time Section 25 of this act is repealed.

§ 26. Dissolution of agency

The agency may be dissolved in the manner provided for the dissolution of districts by Chapter 4 (commencing at Section 58950) of Division 1 of Title 6 of the Government Code, and the agency shall be considered a district within the meaning of all of the provisions of said chapter.

§ 27. Legislative declaration of necessity for special law

The Legislature hereby finds that water problems in the county require county wide water conservation, flood control and development of water resources; that these problems are not general or statewide; that the county for many years has had made investigations and engineering surveys of the county's water resources by private and public engineers; that irrigation districts, county water districts, water storage districts, municipalities, and California water districts now exist within portions of the county, have acquired property and works, developed a limited water supply, and have incurred indebtedness, but have been and are unable alone to economically develop an adequate water supply and control the floods of said county and for such reason it is necessary to have a political entity coextensive with the geographical limits of the entire county; that the county cannot be supplied with water from a common source or by a common system of works; that investigation having shown conditions in said county to be peculiar to it. It is, therefore, hereby declared that a general law cannot be made applicable to said county and that the enactment of this special law is necessary for the conservation, development, control and use of said water for the public good and the protection of life and property therein.

§ 28. Severability clause

If any provision of this act is declared unconstitutional or invalid, for any reason, the remainder of the act shall not thereby be invalidated, but shall remain in full force and effect.

§ 29. Citation of this act

This act may be designated and referred to as "the Kern County Water Agency Act," and any reference thereto by such designation shall be sufficient for all purposes.

§ 30. Act's status as emergency measure

This act is an urgency measure necessary for the immediate preservation of the public peace, health or safety within the meaning of Article IV of the Constitution and shall go into immediate effect. The facts constituting such necessity are:

The creation of the Kern County Water Agency is urgently needed in order to provide a water supply for inhabitants of Kern County, and particularly in order to contract with the State for such a water supply. In order that an election may be held in the county early this year and the Kern County Water Agency may commence to function and exercise its powers, it is necessary that this act go into immediate effect.

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Comparison of AB 3030 Provisions with Agency Act Provisions

AB 3030 Provision	Act 9098 Provision
The control of saline water intrusion.	§4.3(e)(5) – "To prevent contamination, pollution or otherwise rendering unfit for beneficial use the surface or subsurface water used in the agency."
Regulation of the migration of contaminated groundwater.	§4.3(e)(2) – "To prevent interference with or diminution of ... waters." §4.3(e)(5) – "To prevent contamination, pollution or otherwise rendering unfit for beneficial use the surface or subsurface water used in the agency."
The administration of a well abandonment and well destruction program.	§4.3(e)(5) – "To prevent contamination, pollution or otherwise rendering unfit for beneficial use the surface or subsurface water used in the agency."
Facilitating conjunctive use operations.	§4.3(b) – "To store water in surface or underground reservoirs within or outside of the agency for the common benefit of the agency."
Identification and management of wellhead protection areas and recharge areas.	§4.3(e)(2) – "To prevent interference with or diminution of ... waters." §4.3(e)(5) – "To prevent contamination, pollution or otherwise rendering unfit for beneficial use the surface or subsurface water used in the agency."
Identification of well construction policies.	§4.3(e)(2) – "To prevent interference with or diminution of ... waters." §4.3(e)(5) – "To prevent contamination, pollution or otherwise rendering unfit for beneficial use the surface or subsurface water used in the agency."
Mitigation of conditions of overdraft.	§4.3(a) – "To appropriate and acquire water and water rights." §4.3(b) – "To store water in surface or underground reservoirs within or outside of the agency for the common benefit of the agency." §4.3(c) – "To conserve and reclaim water for present and future use within the agency." §4.3(d) – "To import water into the agency and to conserve and utilize, within or outside of the Agency, water for any purpose useful to the agency or the member units thereof.

The development of relationships with state and federal regulatory agencies.	§4.3(a) – "To appropriate and acquire water and water rights." §6 – "The agency shall have the power to cooperate and contract with the United States ... for the purposes of construction of works, whether for irrigation, drainage, or flood control, or for the acquisition, purchase, extension, operation and maintenance of such works, or for a water supply for any purposes, or for the assumption as principal or guarantor of indebtedness to the United States, or for carrying out any of the purposes of the agency, and for said purposes the agency shall have, in addition to the powers set forth in this act, all powers, rights and privileges possessed by irrigation districts..." §6.2 – "The agency may co-operate and act in conjunction and contract with the United States, State of California, any municipality, district, public or private corporation, or any person, in the purchase, sale, or exchange of water, in the acquisition of water or a water supply..."
Replenishment of groundwater extracted by water producers.	§14.2 – "For the purpose of making payments pursuant to contracts entered into by the agency with the United States or the State, in accordance with the provisions of this act, the agency, in addition to the revenues and taxes otherwise provided for in this act, may make assessments apportioned in accordance with the benefits and, for this purpose, may establish zones of benefit which reflect the degree of benefit resulting to each zone from such contract or contracts. In the ascertainment of the benefits derived there shall be taken into account the following: (a) Improvement in the underground water supply. (b) The contribution to the underground water supply by water made available independently of the agency. (c) The adequacy of the water supply made available independently of the agency. (d) The prospective need for a water supply. (e) Extractions from the underground water supply in excess of contributions. (f) The economic impact resulting from the water supply made available under such contract or contracts." §14.20(d) – "The board shall have the power, in addition to the powers enumerated elsewhere in this act, to levy and collect ground water charges for the production of water from ground water supplies within any improvement district which will benefit from the recharge of underground water supplies or the distribution of imported water in such improvement district."

AB 3030 Provision	Act 9098 Provision
The construction and operation by the local agency of groundwater contamination cleanup, recharge, storage, conservation, water recycling, and extraction projects.	§4.3(a) – "To appropriate and acquire water and water rights." §4.3(b) – "To store water in surface or underground reservoirs within or outside of the agency for the common benefit of the agency." §4.3(c) – "To conserve and reclaim water for present and future use within the agency." §4.3(d) – "To import water into the agency and to conserve and utilize, within or outside of the agency, water for any purpose useful to the agency or the member units thereof." §4.3(e)(1) – "To declare rights in or otherwise involving the ownership or use of the natural flow of any stream of surface or subterranean supply of waters used or useful for any purpose of the agency or of common benefit to the lands within the agency or to its inhabitants." §4.3(e)(2) – "To prevent interference with or diminution of such waters." §4.3(e)(3) – "To prevent the wasteful use of water in the agency." §4.3(e)(4) – "To prevent the unlawful exportation of water from the agency." §4.3(e)(5) – "To prevent contamination, pollution or otherwise rendering unfit for beneficial use the surface or subsurface water used in the agency." §4.3(e)(6) – "To prevent any such interference with such waters as may endanger or damage the inhabitants, lands, or use of water in, or flowing into, the agency."
The review of land use plans and coordination with land use planning agencies to assess activities which create a reasonable risk of groundwater contamination.	§4.3(e)(5) – "To prevent contamination, pollution or otherwise rendering unfit for beneficial use the surface or subsurface water used in the agency." §4.3(e)(6) – "To prevent any such interference with such waters as may endanger or damage the inhabitants, lands, or use of water in, or flowing into, the agency."
Rules and regulations for implementation of above activities.	§4.3 – "The agency shall have the power ..."

AB 3030 Provision	Act 9098 Provision
Fees or assessments to pay for above activities (pump tax).	§ 14.20 – "Power to levy and collect ground water charges for production from ground water supplies." [applies only to improvement districts] §14.2 – "For the purpose of making payments pursuant to contracts entered into by the agency with the United States or the State, in accordance with the provisions of this act, the agency, in addition to the revenues and taxes otherwise provided for in this act, may make assessments apportioned in accordance with the benefits and, for this purpose, may establish zones of benefit which reflect the degree of benefit resulting to each zone from such contract or contracts. In the ascertainment of the benefits derived there shall be taken into account the following: (a) Improvement in the underground water supply. (b) The contribution to the underground water supply by water made available independently of the agency. (c) The adequacy of the water supply made available independently of the agency. (d) The prospective need for a water supply. (e) Extractions from the underground water supply in excess of contributions. (f) The economic impact resulting from the water supply made available under such contract or contracts."

KCWA Implementation of Groundwater Management Activities

AB 3030 Provision	KCWA Groundwater Mgmt Activities
The control of saline water intrusion.	Not applicable.
Regulation of the migration of contaminated groundwater.	• Implementation of county-wide groundwater well construction and destruction ordinance. • Operation of groundwater banking projects under oversight of groundwater monitoring committee. • Acquisition and archiving of groundwater level and quality data into data base. • Acquisition and archiving of shallow groundwater level and quality data into data base.
The administration of a well abandonment and well destruction program.	• Implementation of county-wide groundwater well construction and destruction ordinance.
Mitigation of conditions of overdraft.	• Development of historic groundwater overdraft correction programs (e.g., 1979, 1983). • Development of large-scale groundwater banking programs, with operating rules requiring groundwater basin districts who operate banking programs to have balanced water supplies and demands. • Publishing of annual Water Supply Report. • Publishing of Triennial Groundwater Conditions Report for banking projects. • Establishing Zones of Benefit to help import water into the groundwater basin.
Replenishment of groundwater extracted by water producers.	• Implementation of groundwater replenishment charge in Improvement District No. 4. • Establishing Zones of Benefit to help import water into the groundwater basin. • Establishment and utilization of Settlement Funds to make surface water supplies more affordable to groundwater pumpers, thus achieving higher levels of in lieu recharge.
Facilitating conjunctive use operations.	• Development and operation of large-scale groundwater recharge and banking programs. • Construction of facilities (e.g., interconnection between CVC and Kern Water Bank Canal, interconnection between River Canal and Kern Water Bank Canal) which enable more efficient operation of conjunctive use and banking operations. • Publishing of annual Water Supply Report. • Publishing of Triennial Groundwater Conditions Report for banking projects. • Publishing of 1980 Optimization Report, and current effort to update that report.
Identification and management of wellhead protection areas and recharge areas.	• Development of maps for Kern County planning dept. showing areas of particular value for groundwater recharge areas.

AB 3030 Provision	KCWA Groundwater Mgmt Activities
Identification of well construction policies.	• Implementation of county-wide groundwater well construction and destruction ordinance.
The construction and operation by the local agency of groundwater contamination cleanup, recharge, storage, conservation, water recycling, and extraction projects.	• Construction and operation of large-scale groundwater recharge and banking projects. • Involvement in and support of Buena Vista WSD saline groundwater desalination project.
The development of relationships with state and federal regulatory agencies.	• Membership and involvement in State Water Contractors, Inc. • Membership and involvement in Ag/Urban proceedings. • Membership and involvement in now-defunct CALFED Bay-Delta Advisory Council. • Close coordination with Friant Water Users Authority. • Temporary contracts with USBR for Section 215 and other short-term supplies.
The review of land use plans and coordination with land use planning agencies to assess activities which create a reasonable risk of groundwater contamination.	• Review of land use plans and general plans produced by County of Kern. • Participation in Kern County Water Resources Committee. • Participation in Kern Fan Monitoring Committee. • Participation on specially appointed Board of Supervisors committees addressing specific issues, such as biosolids use, dairies, groundwater ordinance.
Rules and regulations for implementation of above activities.	• Work with County of Kern staff on development of ordinances governing well construction and destruction, biosolids use, dairy siting criteria, zoning criteria.
Fees or assessments to pay for above activities (pump tax).	• Implementation of groundwater replenishment charge in Improvement District No. 4.

MAY 22 1989

ENVIRONMENTAL HEALTH

ORDINANCE NO. G-5006

AN ORDINANCE OF THE BOARD OF SUPERVISORS OF THE COUNTY OF KERN, STATE OF CALIFORNIA, REPEALING IN ITS ENTIRETY CHAPTERS 14.04 AND 14.08 OF THE KERN COUNTY ORDINANCE CODE COMMENCING WITH SECTION 14.04.010 THEREOF AND ADDING INSTEAD THEREOF A NEW CHAPTER 14.08, COMMENCING WITH SECTION 14.08.010 CONCERNING THE REGULATION OF WELLS AND WATER SYSTEMS AND THE ADOPTION BY REFERENCE OF CERTAIN STANDARDS CONTAINED IN CALIFORNIA STATE DEPARTMENT OF WATER RESOURCES, BULLETIN NO. 74-81, AND KERN COUNTY HEALTH DEPARTMENT HANDBOOK "UT 50".

The following ordinance, consisting of two (2) sections, was duly and regularly passed and adopted by the Board of Supervisors of the County of Kern, State of California, at a regular meeting of the Board of Supervisors held on the 9th day of May 1989, by the following vote, to wit:

AYES: Austin, Larwood, Hettinger, Shell

NOES: None

ABSENT: Ashburn

Ben Austin
Chairman of the Board of Supervisors of the County of Kern, State of California

(SEAL)

ATTEST:

SUE LASITER
Clerk of the Board of Supervisors

By Earlene Smith Deputy Clerk

THE BOARD OF SUPERVISORS OF THE COUNTY OF KERN ORDAINS AS FOLLOWS:

Section 1. This Ordinance shall take effect and be in full force on and after the 8th day of June, 1989, and shall be published once in the Bakersfield Californian, a newspaper of general circulation, published and printed in the County of Kern, State of California, together with the names of the members of the Board of Supervisors voting for and against the same.

Book No. 894195
Ord. No. G-5006

Section 2. Chapters 14.04 and 14.08, of the Kern County Ordinance Code commencing with Section 14.04.010 are repealed and in their place a new Chapter 14.08, commencing with Section 14.08.010 is added to read as follows:

ARTICLE I. PURPOSE AND DEFINITIONS

Section 14.08.010 - Purpose.

(a) It is the purpose of this Chapter to provide for the design, construction, reconstruction, abandonment, and destruction of:

1. wells defined herein as air conditioning, domestic, agricultural, cathodic protection, industrial, hazardous material monitoring, monitoring and observation, and grounding;
2. geophysical test holes; and
3. test wells;

in such a manner that the ground water of this County will not be degraded, contaminated or polluted, and that water obtained for beneficial uses will not jeopardize the health, safety, or welfare of the people of this County.

(b) In addition, it is the purpose of this Chapter to provide for the design, construction, and modifications of public and non-public water systems, and the permitting of the same, to assure an adequate supply of pure, wholesome and potable water for the users. Nothing in this Chapter shall be interpreted as abrogating any more restrictive requirements of other governmental agencies or state law.

Section 14.08.020 - Definitions. Except where the context otherwise requires, the definitions set forth in the following sections shall apply throughout this Chapter.

Section 14.08.022 - Abandoned Well. "Abandoned well" means a well not equipped with operable pumping equipment, which has not been used for a period of one (1) year and which has not been declared to be an "Out of Service Well". Such well must be destroyed in accordance with Section 14.08.360.

Section 14.08.023 - Agency. "Agency" means the Kern County Water Agency or any other public agency or County department designated by the Board of Supervisors as the County's authorized representative

and delegated the responsibility of administering any of the provisions of this Chapter.

Section 14.08.024 - Agricultural Well. "Agricultural well" means a well used primarily to supply water for irrigation, livestock or other agricultural purposes. Any domestic water service shall be only incidental to the primary agricultural purpose.

Section 14.08.026 - Air Conditioning Well. "Air conditioning well" means a well used to return to the ground water which has been used in a closed system as a coolant in air conditioning processes, or as a heating agent.

Section 14.08.028 - Annular Seal. "Annular seal" means the placement of impervious material in the annular space to prevent the flow of water across or along the annular space.

Section 14.08.030 - Annular Space. "Annular space" means the void between the wall of the well bore and the conductor casing, and between the conductor casing and the well casing, and between the well bore and the well casing.

Section 14.08.032 - Aquifer. "Aquifer" means a geologic formation that transmits water in sufficient quantity to supply pumping wells or springs.

Section 14.08.036 - Bulletin 74-81. "Bulletin 74-81" means the Department of Water Resources Bulletin No. 74-81. "Water Well Standards: State of California."

Section 14.08.038 - Bulletin 74-1. "Bulletin 74-1" means the Department of Water Resources Bulletin No. 74-1, "Cathodic Protection Well Standards: State of California."

Section 14.08.040 - Cathodic Protection Well. "Cathodic protection well" means any artificial excavation in excess of fifty (50) feet deep constructed by any method for the purpose of installing equipment or facilities for the reduction of corrosion of metallic structures and equipment in contact with the ground, commonly referred to as "cathodic protection."

Section 14.08.042 - Contamination. "Contamination" means an impairment of the quality of the waters of the State to a degree which creates a hazard to the public health through poisoning or through the

spread of disease. Contamination shall include any equivalent effect resulting from the disposal of waste. Contamination may include "Pollution."

Section 14.08.044 - Construction. "Construction" means the excavation by digging, drilling or other means of the bore of a well and includes, but is not limited to, excavation, installation of casing, placement of gravel, perforation of casing in place, installation of annular seals and sealing off strata.

Section 14.08.046 - Degradation. "Degradation" means the unreasonable impairment of the quality of water by contaminants, pollutants or natural phenomena which adversely affects the beneficial uses of such water.

Section 14.08.048 - Department. "Department" means the Kern County Environmental Health Services Department unless otherwise specified.

Section 14.08.050 - Destroyed Well. "Destroyed well" means a well that has been destroyed in accordance with the requirements of this Chapter (Section 14.08.360).

Section 14.08.052 - Disposal Well. "Disposal well" means a well used for the disposal of unusable liquids.

Section 14.08.054 - Distribution System. "Distribution system" means all facilities used by a domestic water supplier to deliver water from the source or related treatment facilities to the user connections.

Section 14.08.056 - Domestic Water. "Domestic water" means that water plumbed to a dwelling or structure which is intended to be used for, but not limited to, drinking, food preparation, dish washing and bathing. Domestic water must also be potable as defined in Section 14.08.090.

Section 14.08.058 - Furnish. "Furnish" means to supply.

Section 14.08.060 - Geophysical Test Hole. "Geophysical test hole" means any artificial excavation in excess of fifty (50) feet deep constructed by any method for the purpose of determining subsurface geologic conditions.

Section 14.08.062 - Grounding Well or Terminal. "Grounding well or terminal well" means any artificial excavation in excess of fifty (50) feet deep constructed by any method for the purpose of installing grounding anodes or grounding terminals for any surface or subsurface equipment which is operated by or influenced by electricity, or for any other grounding purposes.

Section 14.08.063 - Hardrock. "Hardrock" means consolidated formation (crystalline or metamorphic rock).

Section 14.08.064 - Hazardous Materials. "Hazardous materials" means all the following liquid and solid substances:

1. Substances on the list prepared by the Director of the Department of Industrial Relations pursuant to Section 6382 of the Labor Code of the State of California.

2. Hazardous substances, as defined in Section 25316 of the Health and Safety Code of the State of California.

3. Any substance or material which is classified by the National Fire Protection Association (NFPA) as a flammable liquid, a class II combustible liquid or a class III-A combustible liquid.

Section 14.08.066 - Hazardous Material Monitoring Well. "Hazardous material monitoring well" means any artificial excavation constructed by any method to extract water or vapor samples, or to install instruments or equipment to detect, measure, record or otherwise monitor or observe the level, chemical constituency or similar characteristics of the ground water beneath or within two hundred (200) feet of a hazardous material site as defined in Section 14.08.068.

Section 14.08.068 - Hazardous Material Site. "Hazardous material site" means a location where hazardous materials are, or have been, handled, treated, stored, or disposed.

Section 14.08.070 - Health Officer. "Health Officer" means the Health Officer of Kern County or his duly authorized representatives. Such authorized representatives may include the Agency or any other public agency designated by the Board of Supervisors as the County's authorized representative and delegated the responsibility of implementing and administering any of the provisions

of this Chapter.

Section 14.08.072 - Industrial Well. "Industrial well" means a well whose primary purpose is to supply water to industry on an individual basis.

Section 14.08.074 - Monitoring and Observation Well. "Monitoring and Observation well" means any artificial excavation constructed by any method to extract water or vapor samples, or to install instruments or equipment to detect, measure, record or otherwise monitor or observe the level, chemical constituency or similar characteristics of the ground water. "Monitoring and observation well" does not mean wells constructed for the purpose of monitoring the presence of ground water which has adversely affected, or threatens to adversely affect, crop root zones (perched water).

Section 14.08.076 - Non-Public Domestic Well or Water System. A "non-public domestic well or water system" means a well or system used to supply domestic water to more than one (1) and less than five (5) service connections.

Section 14.08.078 - Nuisance. "Nuisance" means any use or condition of property or portion thereof, including structures, wells, etc. located thereon, which is unsafe, injurious to health, or which can contribute to ground water degradation.

Section 14.08.080 - Out of Service Well. "Out of service well" means a well that has not been used for a period of one (1) year and which complies with the provisions of Section 14.08.370.

Section 14.08.082 - Owner. "Owner" means the person(s) who is listed on the last equalized property tax assessment role as the owner of the land on which the well is located, or the person(s) who has a legal possessory interest in such land, whether by lease, easement or other legal claim.

Section 14.08.084 - Perched Water. "Perched water" means water in a local zone of saturation held above the main body of ground water by a relatively impermeable stratum. (Water in this zone is generally unpotable.)

Section 14.08.086 - Person. "Person" means any individual, company, firm, corporation or partnership, municipality, public entity

or other public body or institution or association of persons.

Section 14.08.088 - Pollution. "Pollution" means degradation of the quality of waters of the State by contaminants, pollutants or natural phenomena to a degree which unreasonably affects: (1) such waters for beneficial uses, or (2) facilities which serve such beneficial uses. "Pollution" may include "Contamination."

Section 14.08.090 - Potable Water. "Potable water" means water which is safe for drinking, culinary and domestic purposes and meets all requirements of the Health Officer.

Section 14.08.092 - Private Domestic Well. "Private domestic well" means a well used to supply water for the domestic needs of an individual residence or structure.

Section 14.08.094 - Public Domestic Well or Water System. "Public domestic well or water system" means any well or system used to supply or convey water for domestic needs to five (5) or more service connections or regularly serves an average of at least twenty-five (25) individuals daily at least sixty (60) days out of the year.

Section 14.08.096 - Purveyor. "Purveyor" means any person that furnishes or supplies domestic water to users from any source. This includes serving a minimum of two (2) connections and a maximum of one hundred ninety-nine (199) connections. "Purveyor" also includes those persons that supply domestic water for public use or use a private domestic water supply in the operation of a business.

Section 14.08.098 - Recharge Well. "Recharge well" means a well used to introduce water into the ground as a means of replenishing ground water aquifers or basins or impeding the migration of poor quality water within the ground water basin.

Section 14.08.100 - Reconstruction. "Reconstruction" means any alteration, repair, restoration, addition, or subtraction of a well bore, the casing gravel pack, annular seals, surface seals, conductor casing or well casing, or perforations. (This shall not include merely "blowing out" of the perforations.)

Section 14.08.102 - Service Connection. A "service connection" means a connection between a domestic water main and a user connection.

Section 14.08.104 - Source Facilities. "Source facilities" means all components of the facilities used in the production, treatment, storage and delivery of water to a domestic water distribution system.

Section 14.08.106 - Test Well. "Test Well" means a well constructed for the purpose of obtaining the information needed to design a well prior to its construction, or to determine the availability of water in an area.

Section 14.08.108 - Substandard Water System or Well. A "substandard water system or well" means any water system or well which is constructed or operated in an unsafe manner, or in violation of any law, ordinance, regulation, Department rule or order.

Section 14.08.110 - User Connection. "User connection" means the connection of a user's piping to the water purveyor's facilities.

Section 14.08.112 - User. A "user" means any person, as defined herein, using water for domestic purposes.

Section 14.08.114 - Water Quality. "Water quality" means the chemical, physical, biological, bacteriological, radiological and other properties and characteristics of water affecting its beneficial use.

Section 14.08.116 - Well. A "well" means any artificial excavation constructed by any method for the purpose of extracting water from or injecting water into the underground, or used for the purposes of observation or monitoring of the ground water basin, or for cathodic protection, or as a grounding terminal. This definition shall not include:

1. Any well constructed or converted under the jurisdiction of the Department of Conservation of the State of California, (Division of Oil and Gas) except those wells converted for use as water wells;
2. Wells used for the purpose of:
   (a) dewatering excavations during construction, or
   (b) stabilizing hillsides or earth embankments;
3. Springs;
4. Disposal and injection wells constructed or converted under the jurisdiction of the California Water Quality

Control Board or the Environmental Protection Agency underground injection control program.

ARTICLE II. PERMITS, REGISTRATION, REPORTS AND FEES

Section 14.08.120 - Permit Required. Except as otherwise provided, it shall be unlawful for any person or contractor acting on his behalf to construct, reconstruct, deepen or destroy any well described in Section 14.08.116 or cause any of these acts to be done without first having filed a valid application for a permit with the Department and having received approval to begin work.

Every permit shall be deemed to be conditioned upon compliance with the requirements of Article III of this Chapter, except that permits issued to construct, reconstruct, deepen or destroy cathodic protection wells and hazardous material monitoring wells shall be deemed to be conditioned on compliance with the respective reference documents specified in Sections 14.08.220 and 14.08.230.

The Health Officer may prescribe additional permit conditions if the Health Officer determines that they are required to prevent degradation of underground waters as provided for in Section 14.08.010.

Section 14.08.130 - Registration. All persons as defined herein (hereinafter referred to as "Well Contractors") who intend to engage in the construction, deepening, reconstruction or destruction of wells as defined in Section 14.08.116 which are located within Kern County, must first register with the Department and furnish a copy of their current California water well contractor's license (Class C-57) and a Certificate of Insurance covering both Workers' Compensation, Public Liability and Property Damage. Well Contractors must give the Department written notice within fifteen (15) days of any suspension, or revocation of either their license or appropriate insurance coverage. No permits will be issued to any Well Contractor who fails to meet both license and insurance requirements as set forth above.

Section 14.08.140 - Expiration of Permit Application. A permit application issued pursuant to this Article shall expire on the ninetieth (90th) calendar day after date of issuance if the work has not been started and reasonable progress toward completion is not maintained, except that the Health Officer may extend the expiration

date of a permit when warranted.

Section 14.08.150 - Fees. The Department has adopted a published schedule of fees (non-refundable) to be paid by the permit applicant to cover the cost of processing the permit application and field inspections or tests incidental to issuance of any permit pursuant to this Article. Such fees are subject to the approval of and modification by the Board of Supervisors. All fees must be submitted to the Department with the application for a permit.

Section 14.08.160 - Report of Excavation. Any person who has drilled, dug or bored a well for which a permit was issued shall, within thirty (30) days after completion of drilling, digging or boring of such excavation, furnish the Health Officer with a report of such excavation. A copy of the report providing such information submitted to state agencies shall satisfy this requirement. The report shall include soil/lithologic log, E-log (if made), information concerning the type of casing, the depth of the excavation, the number and location of the perforations in the casing, the location, depth and type of materials used in the sealing off strata, chemicals used in drilling, and any other data required by the Health Officer.

Section 14.08.170 - Application for Permit.

(a) Application for a permit required by Section 14.08.120 of this Article shall be made to the Department. Such application shall be on forms furnished by the Department and shall provide all information required by the Department pertaining to the project. Every application shall be signed by the owner, or the authorized agent of the owner.

(b) The following information shall be furnished:

1. Owner's name, address and telephone number.
2. Whether the intended use of the well is for domestic purposes, agricultural, grounding, observation, cathodic protection, monitoring, or for any other purpose or combination of purposes regulated by this Chapter.
3. Location of well by reference to street address, nearest streets or crossroads or other significant

features and by reference to Section, Township, and Range. The quarter of the quarter section to contain the well shall also be identified. An example would be the SW 1/4 of the NE 1/4 of Section 24, T27S, R24E, or using the California Department of Water Resources letter location system, 27S/24E-24G.

4. The Assessor's Parcel Number (APN).
5. Dimensioned plot plan indicating north direction, distances and locations of existing and proposed structures, sewers or sewage disposal systems, other wells, and any other potential source of contamination or degradation on the property or adjacent properties within two hundred (200) feet of the well or proposed well.
6. Well drilling contractor's or subcontractor's name, address, and their contractor's C-57 license number and telephone number.
7. Nature of the work to be done, whether construction, reconstruction, destruction or other work, and, in the case of construction or reconstruction, the method to be used, whether cable tool, rotary, reverse flow, or other method.
8. Estimated depth of well when completed.
9. Diameter, thickness and type of casing.
10. Significant feature of well (e.g., conductor casing, gravel pack, sealing, or perforation locations).

(c) In addition to the foregoing, the Department may require such other and further information relevant to the project as it may deem necessary to determine whether the public purposes expressed in Section 14.08.010 of this Chapter requires the denial of the permit or the imposition of further conditions.

(d) If the well is to be located on a lot less than 2.5 acres (net) in size, the applicant must submit with the application, a

pre-development plan. This plan must delineate the proposed location of all structures and improvements, sewage disposal facilities, area reserved for alternate sewage disposal system, and all potential sources of contamination even on adjacent lots within two hundred (200) feet of the proposed well site. It shall be the responsibility of the permit applicant to prepare a plan that demonstrates the proposed well will not prohibit the free and equal use of the adjacent properties.

(e) Copies of an issued permit shall be forwarded by the Department to the applicant, the Kern County Building Inspection Department, the Kern County Assessor's Department and the Kern County Water Agency.

Section 14.08.180 - Permit Denial. A permit may be denied for any of the following:

1. Failure to supply any information required by or requested pursuant to Section 14.08.170 which is known to, or by the exercise of reasonable diligence, can be acquired by, the applicant.

2. Failure to obtain required approvals from the Kern County Planning and Development Services Department.

3. Failure to submit fees with application.

4. Failure to meet requirements of Section 14.08.130 governing registration.

5. Failure to comply with Section 14.08.190 governing setbacks from pollution sources, except if a variance has been granted by the Health Officer pursuant to Section 14.08.380.

ARTICLE III. WELL STANDARDS

Section 14.08.190 - General Location of Well.

(a) It shall be unlawful for any person to drill, dig, excavate or bore any well in any location in which sources of pollution or contamination are known to exist at such location whereby ground water may become contaminated or polluted even when the well is properly constructed and maintained.

(b) It shall be unlawful to locate a domestic well on a lot or premises when a connection with a public water supply system willing and able to serve such lot or premises, is available within three hundred (300) feet or when a connection already exists. Agricultural

wells may be located in Agricultural Zone districts only.

(c) All wells shall be located an adequate horizontal distance from potential sources of contamination and pollution, with due consideration given to local geological conditions and soil permeability. In any event, as a minimum, the following set back distances shall apply:

septic tank or sewer line	50 feet
subsurface sewage leaching field or pit privy	100 feet
cesspool or seepage pit	150 feet
hazardous material site	200 feet
animal enclosures	100 feet
storm water runoff sump or agricultural drainage sump	100 feet
front property line (not including easements)	25 feet
other property line (not including easements)	5 feet
agricultural or industrial well	200 feet
another well (except hard rock)	100 feet
Class I, II, III waste disposal well	200 feet

(d) The effect on surrounding properties must be considered when measuring set back distances. No approval by the Department should limit or hinder the free and equal use of property by adjacent property owners, except where they have given their approval in writing to the applicant. Such written approval shall be in a form satisfactory to the Department and may be required to be recorded with the County Recorder.

(e) Where extraordinary danger of degradation exists or special hazards are involved, the above distances shall be increased, or special means of protection particularly in the construction of the well, shall be provided as determined by the Health Officer. All wells shall be located up gradient from the specified source of contamination.

(f) All wells drilled within an A (Agricultural) Zone District be set back a distance of seventy (70) feet from mid-section lines and eighty (80) feet from section lines, except that where circumstances justify, an administrative variance may be granted

pursuant to Section 14.08.380.

(g) The top of the well casing shall extend a minimum of one (1) foot above the 100-year base flood elevation as determined by the Federal Emergency Management Agency ("FEMA"), Kern County Planning and Development Services Department or by any special flood study approved by representatives of Kern County. The proposed well site shall meet the minimum standards as provided in Chapter 17.48 of the Kern County Ordinance Code.

(h) Where the proposed well is to be located near a building, such well shall be located far enough from the building so that it will be accessible for repair, maintenance, etc.

(i) The proposed well may not be moved more than five (5) feet from the originally approved site location without a reinspection of the new site being performed by the Health Officer.

Section 14.08.200 - Well Casing Material and Installation. Well casing shall be new with a minimum thickness of 3/16" (0.188"). All other requirements for casing materials and installation shall be as outlined in Chapter II, Part II, Section 12 of Bulletin 74-81 "Water Well Standards - State of California." Provided, however, that the use of fiberglass casing is not approved. PVC well casing must display the letters NSF-wc. (National Sanitation Foundation - well casing.)

Section 14.08.210 - Well Construction. A well shall be constructed in accordance with the standards contained in Chapter II, Part II of Bulletin 74-81, "Water Well Standards - State of California," including the latest revisions thereof.

(a) Drilling Fluids or Additives - The use of any used drilling fluids or additives for any purpose in the construction of a well is prohibited.

(b) The use of any polluted contaminated water in the actual drilling process or for flushing the well hole is prohibited.

(c) It shall be unlawful to inject any pesticide or chemical into the discharge pipe of a well which is not equipped with an approved backflow protection device or method as described in Section 14.08.280.

Section 14.08.220 - Cathodic Protection Wells. Cathodic protection wells shall be constructed and sealed in conformance with the cathodic well standards set forth in Bulletin 74-1, "Cathodic Protection Well Standards", including the latest revisions thereof, with the exception that the depth of the annular seal shall be as required in Section 14.08.240.

Section 14.08.230 - Hazardous Material Monitoring Well.

Hazardous material monitoring wells shall be constructed and sealed in conformance with the standards set forth in Kern County Health Department Publication UT-50.

Section 14.08.240 - Sealing the Upper Annular Space.

(a) The area between the wall of the well bore and the well casing of the drilled hole (the annular space) shall be effectively sealed to protect it against contamination or pollution by entrance of surface and/or shallow, subsurface waters. The minimum depth of the upper annular seal shall be as specified in subsection (b) below.

(b) The minimum depth of the upper annular seal shall be as follows:

Private Domestic Wells	50 feet
Non-Public Domestic Wells	50 feet
Public Domestic Wells	50 feet
Industrial Wells	50 feet
Observation and Monitoring Wells	20 feet
Cathodic Protection Wells	50 feet
Air-Conditioning Wells	50 feet
Agricultural Wells	50 feet

Section 14.08.250 - Sealing Conditions. The requirements for sealing a well shall be as specified in Part II, Chapter II, Section 9B of Bulletin 74-81.

Section 14.08.260 - Annular Seal; Sealing Off Strata.

(a) When any well is to be constructed or reconstructed in such a manner that it will penetrate two (2) or more water bearing strata, one (1) or more of which has been determined by the Health Officer to contain ground water of a quality which will cause the

degradation of ground water in the other strata if the waters are allowed to intermingle, the undesirable stratum shall be sealed off to prevent the flow of the poor quality water through the annular space from degrading water in the strata containing water of an acceptable quality.

(b) Whenever an aquifer containing poor quality water is required to be sealed off as provided in subsection (a) above, a minimum of a twenty (20) foot annular seal shall be placed in the confining formation separating the aquifer containing poor quality water from the aquifers containing acceptable quality water. An electrical geophysical log of the well shall be run to assist in the placement of the annular seal, and a copy made available to the Department. The strata producing the undesirable quality water shall be sealed off by pumping an impervious material opposite the strata no less than twenty (20) feet, even when the confining formation is less than twenty (20) feet in thickness. The sealing material shall fill the annular space in the interval to be sealed, and the surrounding void spaces which might absorb the sealing material. The sealing material shall be placed from the bottom to the top of the interval to be sealed.

(c) Gravel chute shall extend through the annular seal at least two (2) feet into the gravel pack.

(d) Sealing materials shall consist of neat cement, cement grout or cement. In areas of subsidence or under special conditions, the use of other approved sealing materials may be allowed with prior approval of the Health Officer.

(e) In areas where deep subsidence may occur (as, for example, portions of the San Joaquin Valley), provision shall be made for maintaining the integrity of the annular seal in the event of subsidence. Such preventive measures may include the installation of a "sleeve" or "slip joint" in the casing, which will allow vertical movement in the casing without its collapse.

Section 14.08.270 - Well Development or Redevelopment.

Developing, redeveloping, or conditioning of a well shall be done with care and by methods which will not cause damage to the well or cause

adverse subsurface conditions that may destroy barriers to the vertical movement of water between aquifers. The following methods used in the developing, redeveloping, or conditioning of a well when done with care are acceptable:

(a) Overpumping.

(b) Surging by use of a plunger.

(c) Surging with compressed air.

(d) Backwashing or surging by alternately starting and stopping the pump.

(e) Jetting with water.

(f) Introduction of chemicals designed for this purpose.

(g) Bailing.

(h) A combination of the above.

The use of explosives for development shall be only by persons licensed for that purpose. Special care shall be exercised when such explosives are employed in development of a well which penetrates two or more distinct aquifers separated by a natural barrier.

The use of any chemicals for the purpose of development of a well, or any other purpose(s), shall be included on the Well Drillers Log, or if performed by other than the driller on a separate report. Where chemicals or explosives have been used, the well shall be pumped to remove residue from such chemicals and/or explosives to restore the water quality of any affected aquifer to the water quality conditions which existed prior to the use of such chemicals and/or explosives.

Section 14.08.280 - Surface Construction Features. Wells drilled for the purpose of producing water for any beneficial use shall be equipped with the following features, installed as outlined in Chapter II, Part II, Section 10 of Bulletin 74-81:

(a) Disinfection access/sounding tube.

(b) Screened air vent (optional for flowing artesian wells).

(c) A backflow protection device or method approved by the Department.

(d) Unthreaded sample spigot.

Section 14.08.290 - Responsibility for Compliance. It is the responsibility of the Well Contractor to construct the well in accordance with Article III of this Chapter, except for surface construction features.

It is the responsibility of the owner of the well to supply all surface construction features (i.e., slab, watertight sanitary seal, backflow protection device, vent, sounding tube and sample tap) and all required water quality analyses.

Section 14.08.300 - Surface Sealing.

(a) All wells hereafter constructed, deepened or reconstructed shall, prior to being placed into service, be provided with: A watertight reinforced monolithic concrete slab a minimum thickness of six (6) inches, set a minimum of four (4) inches above ground level at the well site, and extending horizontally at least three (3) feet from the edge of the well casing in all directions, and covering the unsealed portion of the well excavation, except that monitoring wells, as defined in Section 14.08.074, shall have a minimum concrete slab two (2) foot by two (2) foot with a minimum thickness of six (6) inches. The concrete slab shall be constructed so as to adequately drain water away from the well casing. Where deviation from this pattern of construction would serve a practical purpose without lessening well protection, the Health Officer may approve such deviation. All wells shall be provided with a sanitary seal so as to prevent surface water from entering the well. Each slab (or well) shall be identified by the name of the owner on the well permit, or APN number, or other approved method.

(b) In those cases where it is not possible to meet the horizontal set back distances from pollution sources described in Section 14.08.190, an alternative means of protection for the well may be to increase the depth of the upper annular seal. Where horizontal set back distances cannot be met or adverse or special hazards exist (such as perched water), the depth of the upper annular seal shall be increased as required by the Health Officer.

(c) In hard rock formations, the minimum depth of seal shall be twenty (20) feet or one (1) foot into hard rock if encountered

first. Sampled hard rock cuttings shall be collected and held at the site for inspection of the Health Officer.

(d) Annular seals of one hundred (100) feet or less in dry formations may be poured. All other seals shall be positively placed from the bottom upward using a pump or by air pressure.

(e) All seals shall set forty-eight (48) hours after placement if an accelerator is not used. A twenty-four (24) hour set time may be allowed if the sealing material contains an accelerator.

(f) During the pumping of sealing material for the annular seal, all standing water must be allowed to drain off and not incorporate into the annular seal nor into the slab.

Section 14.08.310 - Disinfection of Wells. Every new, deepened, repaired or reconstructed individual domestic or community water supply well, after completion of construction, deepening, repair or reconstruction, and before being placed in service, shall be disinfected by a method approved by the Health Officer to produce water meeting bacteriological standards as set forth in applicable State laws and regulations.

Section 14.08.320 - Other Sanitary Requirements. The gravel used in gravel-packed wells, and lubricant mud shall meet the sanitary requirements of Bulletin 74-81, Part II, Section 11.

Section 14.08.330 - Water Quality Testing.

(a) Water from all wells which provide water for any beneficial use shall be tested radiologically, bacteriologically and chemically by a State Certified Laboratory. The results of all such laboratory water testing shall be submitted to the Health Officer within ninety (90) days of drilling or reconstructing the well.

(b) Water from all wells that will be used in food processing or public domestic water systems shall comply with the Domestic Water Quality Standards contained in California Code of Regulations, Title 22, Domestic Water Quality Monitoring Regulations, Sections 64401 et. seq. or the latest revision thereof, or adequate treatment facilities to remove the constituent(s) that is in non-compliance shall be installed.

(c) Water from reconstructed wells shall be tested bacteriologically and meet the same standard as new wells. When deemed necessary by the Health Officer, they shall meet the same chemical standards as new wells.

(d) Chemical, radiological, and bacteriological tests shall be the responsibility of the owner.

(e) Water from agricultural wells shall have, as a minimum, a standard agricultural analysis by a State Certified Laboratory.

Section 14.08.340 - Approval by Health Officer. No water from a new or reconstructed domestic well shall be used for domestic purposes until the well is given final approval by the Health Officer.

Section 14.08.350 - Well Conversion. Before any non-domestic well can be converted to domestic use, it must first have Department inspection and be brought into compliance with this Chapter.

Section 14.08.360 - Well Destruction. All abandoned wells shall be destroyed in such a way that they will not produce water or act as a channel for the interchange of water, when such interchange will result in significant deterioration of the quality of water in any water-bearing formations penetrated, or will present a hazard to the safety and well-being of people or animals. Destruction of a well shall consist of the complete filling of the well in accordance with the procedures prescribed in Section 23 of Chapter II of the California State Department of Water Resources Bulletin No. 74-81. Provided however, that the top fifty (50) feet shall be sealed with concrete or other approved sealing material. All abandoned wells shall be destroyed within ninety (90) days of abandonment.

Section 14.08.370 - Out of Service Wells. Any newly constructed well that has not been completed and given final approval of water quality and surface construction features within ninety (90) days of the cessation of drilling shall be declared out of service or properly destroyed. Any existing well that has not been used for a period of one (1) year shall be properly destroyed unless the owner has filed a "Notice of Intent" with the Health Officer declaring the well out of service, and declaring his intention to use the well again. As evidence of his intentions for future use, the owner shall properly

maintain the well in such a way that:

1. The well has no defects which will impair quality of water in the well or in the water-bearing formations penetrated.

2. If the pump has been removed, the well shall be covered with a watertight seal to prevent injury to persons and the entrance of undesirable water, rodents or foreign matter.

3. The well is marked so that it can be clearly seen.

4. The area surrounding the well is kept clear of brush or debris.

5. Redeclaration of intent shall be made upon request of the Health Officer.

Section 14.08.380 - Administrative Variance. The Health Officer may grant an administrative variance to the provisions of this Chapter where a determination has been made upon the basis of evidence submitted by the owner or his representative demonstrating that a modification of the well standards as provided herein will not endanger the health or safety of the consumer of the water, or the public generally, or contribute to ground water degradation, and strict compliance would be unreasonable in view of all the circumstances.

ARTICLE IV. DOMESTIC WATER SUPPLY SYSTEMS

Section 14.08.390 - Permits. No person shall construct or operate a non-public or public water system unless a petition and plans and specifications are first filed with the Department, a permit is issued as provided in this Article and such permit is not thereafter revoked, suspended or otherwise becomes invalid.

Section 14.08.400 - Application. The provisions for permit and application issuance are as provided for in the Safe Drinking Water Act, California Health and Safety Code Division 5, Part 1, Chapter 7, Water and Water Systems, Sections 4010 through 4039.5, including the latest revisions thereof.

Section 14.08.410 - Design and Construction.

(a) The design and construction of a new public system and the design and construction of changes in the distribution system of an existing public water system shall meet the minimum standards specified in the California Waterworks Standards, Title 22, California Code of

Regulations, Articles 1 through 5, Sections 64553 through 64644, including the latest revisions thereof.

(b) Public water systems not having multiple sources shall provide a minimum of two (2) days storage. (two hundred fifty (250) gallons/connection/day)

(c) All facilities of the distribution system shall be designed and constructed to withstand ample safety factors, the physical stresses to which they will be subjected and shall be free from structural or sanitary hazards. All water supply systems shall be so designed and constructed that they have an adequate capacity to continuously supply pure, wholesome, safe and potable water.

Section 14.08.420 - Modifications. No person shall make major modifications or changes in their water supply system until they first file a petition to do so, and receive an amended permit, if required, from the Kern County Health Department authorizing the modification.

Section 14.08.430 - Source Approval. All water sources used for domestic water supply must have the approval of the Health Officer. Water which is not obtained from an approved source, free from pollution, shall not be used for domestic purposes unless it is adequately purified and disinfected by artificial treatment to insure compliance with the Domestic Water Quality Monitoring Regulations contained in California Code of Regulations, Title 22, Chapter 15, Articles 1 through 9, Sections 64401 through 64501, including the latest revisions thereof.

Section 14.08.440 - Certification of Design. All new public water systems shall be designed and installed under the direction of a qualified civil engineer, duly registered in the State of California.

Section 14.08.450 - Domestic Water Quality and Monitoring. Water from public domestic water systems shall meet the requirements of, and be monitored in accordance with, the regulations established in the California Domestic Water Quality and Monitoring Regulations, Title 22, California Code of Regulations, Chapter 15, Articles 1 through 9, Sections 64401 to 64501, including the latest revisions thereof.

Section 14.08.460 - Backflow Prevention. The protection of the public water supply against actual or potential cross connections shall be as provided for in Cross Connection Regulations, Title 17, California Code of Regulations, Sections 7583, et seq., including the latest revisions thereof, or in any applicable Kern County ordinance which is enacted after the effective date of this Chapter.

Section 14.08.470 - Non-Public Systems. A water system intended to serve more than one (1) and less than five (5) connections shall be installed according to the requirements of the Health Department as outlined in "Guidelines for the Permitting of Non-Public Water Systems". Application for a permit shall be made prior to construction of the system as provided for in Section 14.08.400.

Section 14.08.480 - Operation and Maintenance.

(a) All water systems shall be operated so as to continuously provide an adequate supply of pure, wholesome, safe and potable water.

(b) All personnel responsible for operation and maintenance of a water system shall have sufficient experience and training to qualify them to properly perform their duties. Specially designated personnel shall be available for call during nights, weekends and holidays to meet emergencies.

(c) All water systems shall maintain complete and up-to-date maps of the utility system as well as results of bacteriological and chemical analyses of water, and such other data as may be required by the Health Officer.

(d) All structures, facilities and equipment of the water system shall be operated and maintained in a safe and sanitary manner and kept in good working condition.

(e) Facilities and equipment of the utility shall be kept clean and in good working condition.

(f) Repairs shall be made without undue delay.

(g) Proper equipment, tools and repair parts shall be available and in good condition for use in emergency repairs.

Section 14.08.490 - User Connection Moratorium. The Department may file a notice with the local building inspection

authority requesting that future user connections to a substandard water system be denied. This notice shall remain in effect until such time as the person responsible for the water system corrects the deficiencies and demonstrates the ability to reliably and safely serve existing and/or additional customers. This notice may be filed within thirty (30) days after the water system has been notified of the proposed action. It is the responsibility of the water system to notify each customer (active or inactive) of the pending moratorium.

ARTICLE V. INSPECTIONS, ENFORCEMENT, AND APPEALS

Section 14.08.500 - Inspections.

(a) The Health Officer or his duly authorized representatives, including the Agency, may conduct inspections at any time to insure compliance with the requirements of this ordinance. The Health Officer may prescribe mandatory inspection of domestic well projects, and of projects on which he deems it necessary. The stage at which each inspection is required shall be set forth in the permit.

(b) It shall be unlawful for any person to continue to work on a project past the stage at which an inspection has been prescribed pursuant to this Section or the permit until such inspection by the Health Officer has been completed or waived. A permittee, or one acting on his behalf, shall make an inspection appointment with the Health Officer at least twenty-four (24) hours prior to the estimated inspection time. However, the failure of the Health Officer to make any inspection shall not be deemed a waiver of any future inspections, or any of the enforcement provisions of this Chapter.

(c) Unless otherwise specified or required, each well under construction shall receive a minimum of three inspections:

1. Site
2. Annular seal
3. Final

(d) After the work on a well has been completed, the Health Officer shall be so notified by the person performing the work and the Health Officer shall conduct a final inspection thereof, unless inspection has been waived by the Health Officer.

(e) The Health Officer may request receipts, and/or

affidavits to be submitted when certain inspections are waived.

(f) No water from a new, deepened or reconstructed well shall be used for domestic purposes until a final inspection is made and the well and water quality are approved by the Health Officer.

Section 14.08.510 - Emergency Work. Should persons or property or a well be threatened by a sudden, unforeseen impairment in the quantity or quality of ground water so that it becomes necessary to continue work, or to replace or modify or increase the existing supply, and a permit or inspection cannot be obtained because the Department's offices are not open, the well may be constructed or reconstructed without a permit or without an inspection, provided no other property is served by the well than was served before the emergency work became necessary. All work done under such emergency conditions shall comply with the requirements of this Chapter. In all such cases, the person who caused the work to be done shall file a statement with the Department during the next regular business day following the emergency work, indicating the reasons for the emergency work. The Department shall inspect the well and order the person who caused the emergency work to be done to perform such other and further work, if any, as may be necessary to bring the well into conformity with the requirements of Articles II and III of this Chapter. The terms of such an order shall be deemed permit conditions within the meaning of Section 14.08.120 of this Chapter.

Section 14.08.520 - Permit Not Required. No permit is required to install, replace or repair a pump on an existing well or to redevelop an existing well.

Section 14.08.530 - Delay in Processing Permit. If an application for construction or reconstruction of a well has not been granted or denied within ten (10) business days of the filing of the application with the Department, the Department shall mail to the applicant, before the close of such day, a written status report of the application. If during such time period the Department has not requested from the applicant additional information relevant to the processing of the application, the applicant shall be entitled to appeal such delay in processing the permit application to the Board of

Supervisors in the manner provided in Section 14.08.590 of this Article.

Section 14.08.540 - Stop Work Order. Whenever the construction, deepening, reconstruction or destruction of any well is being carried out contrary to the requirements of this Chapter, the Health Officer shall order work to stop by posting a notice to desist at the well site. It shall be unlawful to do further work until the Health Officer determines that the necessary corrections have been made. It shall be unlawful to perform any work for which a permit has been granted pursuant to this Chapter without complying with the conditions of such permit.

Section 14.08.550 - Disposal Wells. It shall be unlawful to dispose of any material into a domestic well or any abandoned well unless approval is first obtained from the Agency having jurisdiction over such matters.

Section 14.08.560 - Declaration of Nuisance. All wells, constructed, reconstructed, deepened, destroyed or placed out of service after the effective date of this Chapter, not in accordance with the terms of this Chapter, are hereby declared public nuisances which may be abated in accordance with the provisions of this Article. Any existing wells which the Health Officer declares to be a pollution hazard, contamination hazard or a safety hazard may be declared a nuisance.

Section 14.08.570 - Abatement Order. Whenever the Health Officer determines that a nuisance as defined in Section 14.08.078 of this Chapter exists, he may issue the landowner a written order to abate such a nuisance. The order shall state the conditions productive of the nuisance and the time determined by the Health Officer to be reasonable to accomplish such abatement, but not less than two (2) weeks from the date of such notice. It shall also state that unless the nuisance is abated or a notice of appeal filed with the Clerk of the Board of Supervisors, the Health Officer will abate the nuisance and the cost of such abatement may be added to the tax roll as a special assessment against the property.

Section 14.08.580 - Notice; Personal Delivery; Mailing; Posting. The order of abatement shall be mailed to the owner or owners of the premises as their names and addresses appear upon the last equalized property tax assessment roll and either personally served upon an adult person occupying the premises, or if such person cannot be served, by posting such order of abatement in a conspicuous place on the premises. In the event that a nuisance is not abated in accordance with the order of abatement, the Health Officer may proceed to abate the nuisance.

Section 14.08.590 - Appeal of Denial or Conditions or Order of Abatement. If the Department denies an application for a permit, or issues a permit subject to conditions which the applicant believes to be unreasonable, or gives an order of abatement, the applicant may appeal the decision of the Department to the Board of Supervisors. The notice of appeal shall set forth each and all grounds of objection to the decision appealed. The Board of Supervisors shall forthwith file a copy of the notice of appeal with the Department. The Board of Supervisors shall, within thirty (30) days after the receipt of a written appeal, hold a hearing to determine whether the permit shall be issued to the applicant, and if a permit is to be issued, the terms and conditions under which it shall be issued. Such a hearing shall be conducted in accordance with Section 14.08.610 and may be continued from time to time by the Board. The decision of the Board of Supervisors shall be rendered within seven (7) days after the conclusion of the hearing and the decision shall be final as to all matters determined. Notice of the decision shall be given as provided in Section 14.08.620.

Section 14.08.600 - Judicial Review of Decision. Judicial review of a decision of the Board of Supervisors made after a hearing pursuant to this Article, if the decision is to deny the permit or to issue the permit subject to conditions asserted to be inappropriate, shall be made pursuant to Section 1094.6 of the Code of Civil Procedure of the State of California. The method of judicial review, the time limits for judicial review and all of the other provisions of said Section 1094.6 shall govern such judicial review. The Board of

Supervisors shall give written notice to the applicant that the time within which judicial review must be sought is governed by said Section 1094.6 of the Code of Civil Procedure.

Section 14.08.610 - Hearing; Conduct. At the date and time set, a public hearing shall be held before the Board of Supervisors. The owner and any other person requesting such hearing may be represented by counsel. The Board of Supervisors shall hear all pertinent evidence offered by all interested persons. The technical rules of evidence shall not be applicable to the hearing. All persons giving evidence shall be sworn before testifying. The owner and any other person requesting such hearing may employ a certified stenographic reporter to report the hearing. The Board may continue said hearing from time to time.

Section 14.08.620 - Hearing; Decision. At the conclusion of the hearing, if the Board of Supervisors determines that a public nuisance exists, it shall thereupon order the nuisance abated no sooner than thirty (30) days following the mailing by the Clerk of the notice of the Board's decision. The Board shall determine the manner in which the nuisance shall be abated. Such notice shall be sent by regular mail to the person requesting the hearing at the address set forth in such request, and to any other person who files a request therefor with the Clerk.

Section 14.08.630 - Abatement. If a nuisance is not abated or a hearing sought within the time specified in this Article, or if after a hearing, a nuisance is not abated, the Health Officer may proceed to abate the nuisance by force account contract.

Section 14.08.640 - Accounting. The Health Officer shall file with the Clerk of the Board of Supervisors a report specifying the work performed, the itemized and total cost of the work, a description of the real property upon which the well is or was located, and the names and addresses of the owners as their names appear in the latest equalized property tax assessment roll.

Section 14.08.650 - Hearing: Accounting. A hearing before the Board of Supervisors shall be held on the report described in Section 14.08.640 at which time any protests or objections thereto will

be heard. The Clerk of the Board of Supervisors shall mail notice of the hearing to the owner or owners of record at least ten (10) days prior to the hearing. The Board of Supervisors shall determine at the hearing the correct charge to made for the work. The owner or owners of record shall be given notice by mail of the determination of the Board of Supervisors, which notice shall inform the owner or owners that the costs may become a lien against the property as provided herein. If such costs are not paid within thirty (30) days of mailing of the notice of determination by the Board of Supervisors, the costs shall be assessed upon the property involved forthwith as a special assessment and shall be a lien on the property for the amount thereof from the time of the mailing of the notice of determination.

Section 14.08.660 - Punishment. Violation of any section of this Chapter is a misdemeanor and is punishable by a fine of not less than one hundred dollars ($100) nor more than one thousand dollars ($1000) or by punishment of both a fine and imprisonment in the county jail not to exceed six (6) months.

Semitropic Groundwater Banking Program

Semitropic Water Storage District has a proven groundwater banking system

SEMITROPIC
GROUNDWATER BANKING
WATER STORAGE DISTRICT

Now Available
New Unit
can deliver
200,000 AF/Y
of dry year supply

Semitropic Groundwater Bank

The Semitropic Groundwater Bank was initiated in the early 1990s and made available 1 million acre-feet of storage. The Banking Partners would deliver wet year or surplus water to Semitropic. When called on Semitropic would return the water to the California Aqueduct either by exchanging its entitlement or by reversing the intake facility and actually deliver a maximum of 90,000 acre-feet/year of water back into the California Aqueduct. This program is fully subscribed with six banking partners who have delivered about 700,000 acre feet of water to Semitropic and water has been returned at the 300 cfs rate. This is a proven and working water bank.

To answer additional needs, a new unit has been developed to provide added storage and return capacity to the California Aqueduct. An area in the north west part of Semitropic is not irrigated because of poor soil conditions. There is good quality groundwater in the area below the Corcoran Clay with a pump lift of about 275 feet. A program has been developed and fully permitted to install up to 65 wells in the area and provide conveyance facilities to the California Aqueduct (see back page). Model studies show that up to 150,000 acre-feet/year can be extracted for a three-year period without causing unreasonable conditions. By adding 50,000 acre-feet/year of recovery from the existing area the ***new unit*** of the Semitropic Water Bank can deliver up to 200,000 acre feet/year of ***dry year yield*** to the California Aqueduct. The ***new unit*** called the Stored Water Recovery Unit is available for subscription.

Existing Program *(under contract)*		1,000,000 Acre-Feet
New Unit *(available)*		
Storage		650,000 Acre-Feet
Recharge	50,000 to	400,000 Acre-Feet/yr
Recovery		200,000 Acre-Feet/yr

Existing Program

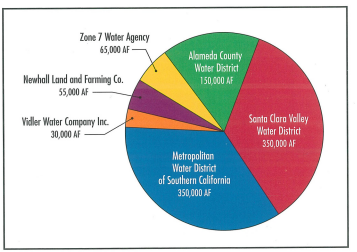
Six banking partners have contracted for 1 million acre feet of storage capacity.

How the Bank Works

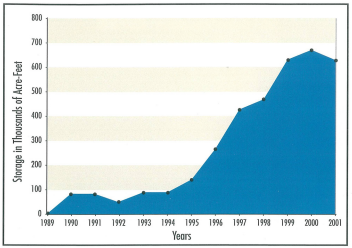
Wet year and surplus water is conveyed to storage in the groundwater basin primarily by in-lieu deliveries, where farmers take imported water in-lieu of pumping groundwater. Some water is also stored by direct recharge. The banked water is returned to the State Water Project (SWP) by release of Semitropic contract entitlement, and/or by "pumpback" to California Aqueduct at 300cfs.

Semitropic Strategically Located for Water Banking

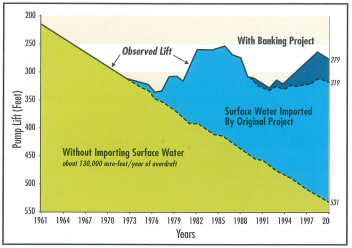
Banking Partners



Water in Storage



Groundwater Levels



New Unit

The New Unit was created to increase storage, recharge, and dry year deliveries to the California Aqueduct, and is available for new banking partners. The heart of the project is a well field in an area of good quality deep groundwater. This area is unfarmed because of unsatisfactory soil. The New Unit is sized to deliver up to 200,000 acre feet/year to California Aqueduct via a seven mile long 96-inch diameter pipe (200,000 acre-feet/year which is 10% of the SWP yield in a 50% year).

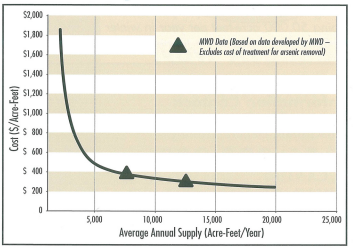
New Unit Participants Can Include:

- Existing Banking Partners
- Public Agencies
- Metropolitan Sub-Agencies
- Environmental Water Account
- Private Investors
- Developers requiring assured water supply

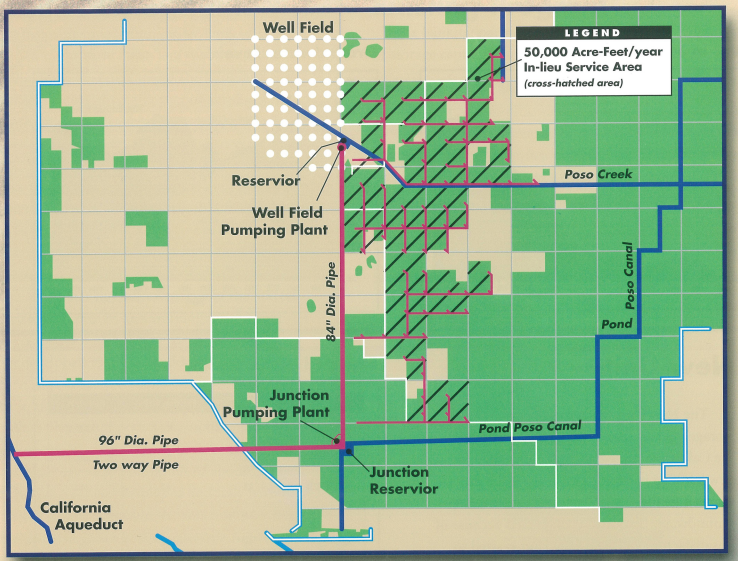
Expected Water Quality

	Aqueduct	Existing Wells	New Unit
TDS (mg/l)	260.0	390.0	160.0
As (µg/l)	2.0	8.0	60.0
CrVI (µg/l)	0.2	6.0	5.0
Ur (pCi/l)	1.5	2.0	0.13
NO_3 (mg/l)	2.3	5.0	0.6
Br (µg/l)	210.0	190.0	90.0
TOC (mg/l)	3.0	0.8	0.57

Unit Cost of Stored Water Recovery Unit



Facilities for New Unit



Available Capacity of New Unit

Storage	400,000 to 650,000 Acre-Feet
Recharge	50,000 to 400,000 Acre-Feet/yr
Return Capacity to Aqueduct	200,000 Acre-Feet/yr*

** Return Capacity comes from 65 new wells located in the well field pumping 150,000 acre-feet per year in ten months and existing wells pumping 50,000 acre-feet per year in winter months to the Pond Poso Canal for transfer to the Junction Pumping Plant and 96" Pipe.*

Board of Directors

President	Rick Wegis
Vice President	Ted R. Page
Secretary	Jim Crettol
Treasurer	Philip Portwood
Director	Larry Frey
Director	Jeff Fabbri
Director	Dan Waterhouse

For Information Contact:

Will Boschman, *General Manager*
1101 Central Avenue
Wasco, CA 93280
Phone 661 758 5113
Email semi@lightspeed.net

Bookman Edmonston
Consulting Engineer

Young Wooldridge
District Counsel

Andrew Werner
Layne Water Development and Storage
5700 Wilshire Boulevard, Suite 330
Los Angeles, CA 90036
Phone 323 936 9303
Email awerner@laynewater.com

The BAKERSFIELD CALIFORNIAN
P.O. BOX 440
BAKERSFIELD, CA 93302

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STATE OF CALIFORNIA
COUNTY OF KERN

I AM A CITIZEN OF THE UNITED STATES AND A RESIDENT OF THE COUNTY AFORESAID: I AM OVER THE AGE OF EIGHTEEN YEARS, AND NOT A PARTY TO OR INTERESTED IN THE ABOVE ENTITLED MATTER. I AM THE ASSISTANT PRINCIPAL CLERK OF THE PRINTER OF THE BAKERSFIELD CALIFORNIAN, A NEWSPAPER OF GENERAL CIRCULATION, PRINTED AND PUBLISHED DAILY IN THE CITY OF BAKERSFIELD COUNTY OF KERN,

AND WHICH NEWSPAPER HAS BEEN ADJUDGED A NEWSPAPER OF GENERAL CIRCULATION BY THE SUPERIOR COURT OF THE COUNTY OF KERN, STATE OF CALIFORNIA, UNDER DATE OF FEBRUARY 5, 1952, CASE NUMBER 57610; THAT THE NOTICE, OF WHICH THE ANNEXED IS A PRINTED COPY, HAS BEEN PUBLISHED IN EACH REGULAR AND ENTIRE ISSUE OF SAID NEWSPAPER AND NOT IN ANY SUPPLEMENT THEREOF ON THE FOLLOWING DATES, TO WIT:

03/26, 04/02

ALL IN THE YEAR 2003

I CERTIFY (OR DECLARE) UNDER PENALTY OF PERJURY THAT THE FOREGOING IS TRUE AND CORRECT.

Sue Tosti

DATED AT BAKERSFIELD CALIFORNIA

April 2, 2003

First Text
NOTICE OF PUBLIC HEARINGAND WORKSHOPSEM

Ad Number 832770

NOTICE OF PUBLIC HEARING AND WORKSHOP SEMITROPIC WATER STORAGE DISTRICT

NOTICE is hereby given that a public hearing will be held on April 9, 2003, at 3:00 p.m. at the offices of the Semitropic Water Storage District, located at 1101 Central Avenue, Wasco, California 93280. The purpose of the hearing is to receive comments regarding whether or not to adopt a resolution of intention to draft a groundwater management plan pursuant to Part 2.75 (commencing at Section 10750) of Division 6 of the California Water Code. Written comments may be sent to the District at P. O. Box Z, Wasco, CA 93280 and must be received on or before April 9, 2003. The resolution of intention, if adopted, will be for the purposes of implementing the plan and establishing a groundwater management program.

A workshop with the District's Board of Directors will be held immediately following the hearing. The workshop will include a presentation respecting the elements to be addressed in a groundwater management plan. Those interested in participating in developing the groundwater management plan are encouraged to attend the workshop and indicate their interest. Interest may also be expressed in writing and should be sent to the District at P. O. Box Z, Wasco, CA 93280.
March 26, April 2, 2003
(#832770)

AGENDA

SEMITROPIC WATER STORAGE DISTRICT
ACTING FOR AND ON BEHALF OF ITSELF AND SEMITROPIC IMPROVEMENT DISTRICT,
BUTTONWILLOW IMPROVEMENT DISTRICT, AND POND-POSO IMPROVEMENT DISTRICT
REGULAR MEETING OF BOARD OF DIRECTORS
Wednesday, April 9, 2003 at 2:00 p.m.

1. Call to Order: President Rick Wegis

2. Acknowledgment of guests:
3. Public Comment Period:

4. Approve Minutes:
   (a) Regular Meeting: March 12, 2003
   (b) Adj. Regular Meeting: None

5. Approve Treasurer's Report:
   (a) Semitropic Water Storage District
   (b) Semitropic Improvement District

7. Approve Payment of Bills as listed on the Current Disbursement List, dated April 9, 2003.

8. Manager's Report:
   (a) Water Supply Update
      * Consider '03 Delivery Policies (Energy-Water, Landowner Well Operations, etc.)
      * Adjust Contract Water Payment Schedule
      * Emergency Water Policy
   (b) Status Of Delinquencies
   (c) Energy Project Issues
      * Consider Retaining Services of Mike Engelbrecht
   (d) Banking Project Update
      * Consider Agreement With George Miller & Assoc.
      * Consider Agreement With CME Investments
   (e) Select Design/Build Team For SWRU
   (f) Allocation of Grant or Low Interest Funding in SWRU
   (g) Consider Resolutions To Delay Fixing GASC and GPSC To May

9. **Public Hearing: 3:00 p.m. - Notice of Intention to Draft a Groundwater Management Plan & Hearing Objections**

10. Consulting Engineers: Navigant (B-E) Progress Report

11. Legal Counsel: Ernest A. Conant-
    CLOSED SESSION
    Govnmt. Code 54956.9(a) & 54957 - in order to confer with legal counsel regarding pending litigation and personnel matters

12. Old Business/Correspondence

ADJOURNMENT - To 2:00 p.m. April 23, 2003

Semitropic Water Storage District

Public Hearing – April 9, 2003

Groundwater Management Plan

Attendance Roster

- [illegible] BE
- [illegible] SWSD
- Philip Portwood SWSD
- James A. [illegible] SWSD
- [illegible] B-E
- [illegible] SWSD
- Marsha Payne SWSD
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible] – LAYNE
- [illegible]
- Steve [illegible]
- Paul Oshel SWSD
- Bill Walker SWSD
- RON EID

Semitropic Water Storage District

Public Hearing – April 9, 2003

Groundwater Management Plan

The purpose of this hearing is to receive comments from the public regarding whether or not the Semitropic Water Storage District (District) should adopt a resolution of intention to draft a groundwater management plan pursuant to Part 2.75 (commencing at Section 10750) of Division 6 of the California Water Code. A draft of the proposed resolution is attached. The resolution of intention, if adopted, will be for the purposes of implementing the plan and establishing a groundwater management program.

In this regard, Section 10750 (Legislative findings, declarations and intent) is reproduced following:

(a) The Legislature finds and declares that groundwater is a valuable natural resource in California, and should be managed to ensure both its safe production and its quality. It is the intent of the Legislature to encourage local agencies to work cooperatively to manage groundwater resources within their jurisdictions.

(b) The Legislature also finds and declares that additional study of groundwater resources is necessary to better understand how to manage groundwater effectively to ensure the safe production, quality, and proper storage of groundwater in this state.

The existing Semitropic Groundwater Monitoring Committee includes representatives from Buena Vista Water Storage District, Rosedale-Rio Bravo Water Storage District, Shafter-Wasco Irrigation District, North Kern Water Storage District, and Southern San Joaquin Municipal Utility District. This Committee will act as a "Technical Advisory Committee", which will provide technical review and comment during development of the Groundwater Management Plan. Other interested parties may participate in the District's development of the Groundwater Management Plan by (1) attending the workshop immediately following this hearing, (2) requesting a copy of the "Basic Elements" to be addressed in the plan, (3) attending a meeting of the District's Board of Directors at 2:00 p.m. on May 14, 2003, at the District's office, to provide comment and/or indicate area of interest, (4) submitting comments and/or indicating area of interest in writing, (5) requesting a copy of the draft plan when it is available for review (estimated to be about the end of May 2003), and (6) submitting comments on the draft plan by calling the District's General Manager (Will Boschman), by delivering written comments to the District, and/or by attending a meeting of the District's Board of Directors at 2:00 p.m. on June 11, 2003, at the District's office, at which time adoption of the plan will be considered. The District's office may be reached at (661)-327-7144 or at 1101 Central Avenue, Wasco, CA. The District's mailing address is P.O. Box Z, Wasco, CA 93280.

BEFORE THE BOARD OF DIRECTORS OF THE
SEMITROPIC WATER STORAGE DISTRICT

Resolution No. ST 03-2

IN THE MATTER OF:

RESOLUTION OF INTENTION OF
SEMITROPIC WATER STORAGE DISTRICT
TO DRAFT A GROUNDWATER MANAGEMENT PLAN

WHEREAS, adoption of a Groundwater Management Plan is in furtherance of and consistent with the District's adopted project approved by the landowners and the historical operations of the District; and

WHEREAS, Part 2.75 of Division 6 of the California Water Code permits the adoption and implementation of groundwater management plans to encourage authorized local agencies to manage groundwater resources within their service areas; and

WHEREAS, the Semitropic Water Storage District, acting for and on behalf of itself and its improvement districts (collectively the "District"), is an authorized local agency and may therefore adopt and implement such a groundwater management plan; and

WHEREAS, a public hearing was held on April 9, 2003 to discuss the adoption and implementation of a groundwater management plan; and

WHEREAS, the Board believes the groundwater can best be managed, as in the past, by local agencies in coordination with owners of lands overlying the groundwater basin; and

WHEREAS, the Board believes the adoption of a groundwater management plan will be in the best interests of the District's landowners and water users and can help meet the projected long-term water needs of the District;

BE IT RESOLVED, by the Board of Directors as follows:

The foregoing findings are true and correct;

1. It is the intention of the District to draft a groundwater management plan in accordance with Part 2.75 of Division 6 of the California Water Code, and the District's consultant is hereby authorized and directed to draft such a plan;

2. That this resolution shall be deemed a resolution of intention in accordance with California Water Code Section 10753.2;

3. After such a plan has been prepared, the District will conduct a second public hearing in accordance with the California Water Code Section 10753.5, et seq. to determine whether to adopt the plan;

4. That the staff is authorized and directed to publish this resolution of intention in accordance with the provisions of California Water Code Section 10753.3 and to provide interested persons with a copy of this resolution upon written request;

5. That the Board hereby authorizes its General Manager to execute all documents and take any other action necessary or advisable to carry out the purposes of this resolution.

All the foregoing being on motion of Director Portwood seconded by Director Crettol and authorized by the following vote, to wit:

AYES: Directors: Crettol, Fabbri, Frey, Page, Portwood, Waterhouse, and Wegis

NOES: None

ABSTAIN: None

ABSENT: None

I HEREBY CERTIFY that the foregoing resolution is the resolution of said District as duly passed and adopted by said Board of Directors on the 9th day of April, 2003.

WITNESS my hand and seal of said Board of Directors this 9th day of April, 2003.

Asst. Secretary of the Board of Directors

[SEAL]

Semitropic Water Storage District

Groundwater Management Plan

"Basic Elements"

Recently, the California Department of Water Resources has been working to identify those elements which must be addressed in a groundwater management plan prepared by a local agency in order to be in compliance with the requirements of the Water Code. Based on this work, the District anticipates that the principal elements to be addressed in a groundwater management plan would include the following:

1. A plan to "involve other agencies that enables the local agency [the District] to work cooperatively with other public entities whose service area or boundary overlies the groundwater basin."

2. The area to be managed under the plan.

3. A map showing the area of the groundwater basin, as defined by DWR Bulletin 118, with the area of the District subject to the plan, as well as the boundaries of other local agencies that overlie the basin in which the District is developing a groundwater management plan.

4. Management objectives for the groundwater basin that is subject to the plan.

5. Monitoring and management of groundwater levels, groundwater quality, inelastic land surface subsidence, and changes in surface flow and surface water quality that directly affect groundwater levels or quality or are caused by groundwater pumping.

6. Monitoring protocols for the components listed in item 5.

MINUTES OF THE REGULAR MEETING
OF THE BOARD OF DIRECTORS OF THE
SEMITROPIC IMPROVEMENT DISTRICT,
BUTTONWILLOW IMPROVEMENT DISTRICT
AND
POND-POSO IMPROVEMENT DISTRICT
OF SEMITROPIC WATER STORAGE DISTRICT

Convened at 2:00 p.m. on Wednesday
April 9, 2003

The regular meeting of the Board of Directors was called to order by President Wegis on Wednesday, April 9, 2003, at 2:00 p.m., at the offices of the District, 1101 Central Avenue, Wasco, California.

Directors Present: **James A. Crettol, Jeff Fabbri, Larry Frey, Ted Page, Phil Portwood, Dan Waterhouse and Fredrick A. Wegis;**

Directors Absent: **None;**

Others Present: **General Manager, Wilmar L. Boschman;**
District=s Engineer, Paul Oshel;
District=s Superintendent, John Lynch;
District=s Controller, Bill Walker;
District's Accountant, Judy Burns;
District=s Administrative Secretary, Marsha Payne;
District=s Legal Counsel, Steve Torigiani;
District=s Consulting Engineers, Navigant Consulting, Inc.;
Represented by Dick Rhone, Reid Johnson and Ron Eid;
Steve Gair, representing Wingate Real Estate;
David Singleton and Tony Morgan, representing Layne Christensen Co.;
Rick Amigh and Mike Burson, representing W.M. Lyles Co.; and
Drew Black and John LeGros, representing Hanson Pipe & Products.

President Wegis opened the meeting and welcomed the guests.

MINUTES:

On motion of Director Frey, seconded by Director Waterhouse, the Minutes of the Regular Meeting of March 12 were approved.

TREASURER'S REPORT:

On motion of Director Portwood, seconded by Director Page, the Treasurer's Reports for Semitropic Water Storage District and Semitropic Improvement District for March 2003 were approved.

ACCOUNTS PAYABLE:

Some items on the Disbursement List were discussed, including a backcharge from The Gas Company for running a line extension to the office; Time Warner Cable for high speed cable connection for the computer system; and accounting charges to date for the 2002 audit.

On motion of Director Waterhouse, seconded by Director Frey, payment of the Accounts Payable as listed on the April 9, 2003 Disbursement List for Semitropic Water Storage District and Semitropic Improvement District were approved.

A copy of the Disbursement List is attached hereto as "Exhibit A".

Judy Burns left the meeting at 2:20 p.m.

MANAGER'S REPORT:

Manager Boschman's written report on "District Activity During March 2003," dated
April 3, 2003 was accepted for filing. In addition, Manager Boschman presented the following:

1. Water Supply

Manager Boschman reported that the Kern County Water Agency notified member agencies that the State allocation was increased as of today to 60% allocation. Discussion followed on comparison with last year's allocation.

The Manager presented three previously used water policies that need updating, which include, 1) Contract Water payment adjustments from an assumed 100% supply to the actual supply; 2) landowner release of unused water; and 3) landowner well pumping

prior to August 15 and the sale of emergency water, all of which are the same or similar to the policies used in 2001 and 2002. Discussion followed.

On motion of Director Page, seconded by Director Crettol, the Board elected to re-instate each of the above referenced policies for one year.

Reid Johnson of Bookman-Edmonston entered the meeting at 2:30 p.m.

2. **Select Design/Build Team For SWRU**

Manager Boschman informed the Board that one proposal had been submitted for the SWRU Design/Build Project, which the Board previously extended to March 31. Upon review, District staff recommended that the Board accept the proposal, which is recognized as "Team Layne." The team consists of well qualified and experienced organizations who have the capability to develop a quality project in a cost effective, timely manner. "Team Layne" members include:

Layne Christensen Company
Layne Water Development and Storage
W.M. Lyles Co.
Bookman-Edmonston Engineering
Braun Electric
Hanson Pipe
Boyle Engineering, Inc.
ARB, Inc.
HDR

On motion of Director Crettol, seconded by Director Page, the Board approved the acceptance of the "Team Layne's" Design/Build Proposal for the SWRU Project and authorized staff to proceed with preparing appropriate contract and other documents needed to implement the design/build process.

3. **Consider Agreement With CME Investments**

Manager Boschman stated that Ed Evans of CME Investments has submitted a proposal to refinance the existing Wells Fargo revenue bonds of 1999 and 2000 that may provide significant near term savings to the District, especially if done before June 5 when the next bond payment is due. Discussion followed on whether to retain Mr. Evans as a financial advisor in restructuring the loans.

Due to lack of data to make an informed decision, the Board set a special Board meeting for April 15 for further discussion of retaining Mr. Evans and/or refinancing the existing bonds.

4. **Status of Delinquencies**

One Contract Water account, Lin Hsiu Duan Family Trust, is delinquent in the amount of $34,839.53.

One Energy account, Kenneth Pollard Farms, is delinquent in the amount of $306.35.

5. **Energy Project Issues**

Manager Boschman reported that District staff signed a Memorandum of Understanding with World Water to determine more specifically the cost and final proposal for constructing approximately 1 MW of solar generation capability, which will then be presented to the Board for final consideration. Discussions are still ongoing regarding the Canadian Cascade Power Project considering exit fees and tax exempt status. District staff will present recommendations at a later date.

The Manager stated that Michael Engelbrecht, a financing consultant who is familiar with tax exempt bonds and has experience in obtaining funds for large projects, has already done considerable research for funding possibilities.

On motion of Director Portwood, seconded by Director Crettol, the Board authorized staff to hire Mr. Engelbrecht on a consulting basis, not to exceed $5,000, to provide guidance in securing financing for the Cascade Power Project.

6. **Banking Project Update**

Manager Boschman reported that the Banking Partner Amendments were finalized in early April and delivered for execution.

Manager Boschman reviewed the terms of George Miller's contract request in a effort to retain him on an annual basis to help obtain Federal and State funding for the District's construction of groundwater banking projects. Discussion followed.

On motion of Director Page, seconded by Director Crettol, the Board authorized staff to execute an employment contract with George Miller to help the District secure Federal funding. State funding issues will be addressed separately.

It was noted that Director Portwood voted no on this motion.

SEMITROPIC WATER STORAGE DISTRICT
PUBLIC HEARING APRIL 9, 2003
NOTICE OF INTENTION TO DRAFT A
GROUNDWATER MANAGEMENT PLAN & HEARING OBJECTIONS

President Wegis called the hearing to order at 4:40 p.m. He noted that a quorum was present and that the attendance had been noted in the usual fashion. He turned the hearing over to Ron Eid of Bookman-Edmonston, District's consulting engineers.

Mr. Eid stated that the reason for the hearing was to receive comments from the public regarding whether or not the Semitropic Water Storage District should adopt a resolution of intention to draft a groundwater management plan pursuant to the California Water Code. The resolution of intension, if adopted, will be for the purposes of implementing the plan and establishing a groundwater management program. Notice was published in the Bakersfield Californian and proper requirements have been met.

It was noted that there were no guests present regarding hearing matters, and no written comments had been received by the District.

On motion of Director Portwood, seconded by Director Crettol, Resolution No. ST 03-2 was adopted:

RESOLUTION OF INTENTION OF
SEMITROPIC WATER STORAGE DISTRICT
TO DRAFT A GROUNDWATER MANAGEMENT PLAN

President Wegis declared the public hearing closed at 4:45 p.m.

7. **Adopt Resolution Deferring Fixing Amount of General Administrative and General Project Service Charges**

Pursuant to the Semitropic Improvement District's Rules and Regulations, Rule 6 (C-D), at the Regular Board Meeting in April or such other time as may be announced at said meeting, the Board shall consider, determine, and by resolution, fix the amount of the General

Administrative and General Project Service Charges for the current fiscal year. The District is not prepared to set such charges until the Regular Board Meeting in May. Manager Boschman presented two resolutions for Board action.

On motion of Director Portwood, seconded by Director Crettol, Resolution Nos. BW 03-1 and PP 03-1, were adopted:

DEFERRING FIXING THE AMOUNT OF THE GENERAL ADMINISTRATION AND GENERAL PROJECT SERVICE CHARGES FOR SAID IMPROVEMENT DISTRICT (FOR 2003, COLLECTED 2003-2004)

Consulting Engineer's Report:

Mr. Dick Rhone from Bookman-Edmonston Engineering presented the AConsulting Engineers= Report on Projects for Semitropic Water Storage District@ for work during March 2003, which was accepted for filing.

Mr. Reid Johnson reported on the construction projects. After review of bids received April 3 on the Monitoring Wells, Specifications No. WB-405, Layne Christensen of Fontana, CA was the low bidder.

On motion of Director Wegis, seconded by Director Portwood, the Board authorized Award of Contract, subject to final review by legal counsel and consulting engineers, in the form of Resolution SID 03-1:

AWARDING CONTRACT FOR CONSTRUCTING MONITORING WELLS, SPECIFICATIONS NO. WB-405

Allocation of Grant or Low Interest Funding in SWRU

Manager Boschman requested guidance from the Board in the event of an allocation of grant or low interest funds for Phase I, II, and III of the SWRU in relation to the Banking Partners. Discussion followed. By general consensus, the Board agreed that funds should be split with 50% applied to the 25% portion of Phase 1 offered to Existing Banking Partners and the other 50% applied to the balance of Phase I, II & III.

Directors Waterhouse, Fabbri, and Portwood left the meeting at 5:15 p.m. Layne Christensen and Bookman-Edmonston representatives left as well.

Legal Counsel

At 5:20 p.m., Mr. Steve Torigiani publically stated that a closed session would be held pursuant to the following:

> **Government Code 54956.9(a) & 54957 - in order to confer with Legal counsel regarding pending litigation and personnel matters.**

At 5:25 p.m. the Board reconvened to open session.

Director Wegis stated that no action was taken during closed session.

ADJOURNMENT:

At 5:30 p.m., the meeting was adjourned by President Wegis until Wednesday, April 15, 2003, at the District office to continue the business of the District.

Respectfully submitted,

James A. Crettol, Secretary

APPROVED:

Fredrick A. Wegis, President

The BAKERSFIELD CALIFORNIAN
P.O. BOX 440
BAKERSFIELD, CA 93302

PROOF OF PUBLICATION

RECEIVED-BFL

APR 2 1 2003

Navigant CONSULTING, INC.

NAVIGANT CONSULTING
5100 CALIFORNIA AV

BAKERSFIELD CA 93309

Ad Number	840623	**PO #**	Resolution #ST
Edition	TBC	**Run Times**	2
Class Code	2620 Legal Notices		
Start Date	4/11/03	**Stop Date**	4/18/03
Run Date(s)	04/11,18		
Billing Lines	102	**Inches**	8.50
Total Cost	336.56	**Account**	1BOO05
Billing Address	NAVIGANT CONSULTING 5100 CALIFORNIA AV BAKERSFIELD CA 93309		
Solicitor I.D.:	C010		

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STATE OF CALIFORNIA
COUNTY OF KERN

I AM A CITIZEN OF THE UNITED STATES AND A RESIDENT OF THE COUNTY AFORESAID: I AM OVER THE AGE OF EIGHTEEN YEARS, AND NOT A PARTY TO OR INTERESTED IN THE ABOVE ENTITLED MATTER. I AM THE ASSISTANT PRINCIPAL CLERK OF THE PRINTER OF THE BAKERSFIELD CALIFORNIAN, A NEWSPAPER OF GENERAL CIRCULATION, PRINTED AND PUBLISHED DAILY IN THE CITY OF BAKERSFIELD COUNTY OF KERN,

AND WHICH NEWSPAPER HAS BEEN ADJUDGED A NEWSPAPER OF GENERAL CIRCULATION BY THE SUPERIOR COURT OF THE COUNTY OF KERN, STATE OF CALIFORNIA, UNDER DATE OF FEBRUARY 5, 1952, CASE NUMBER 57610; THAT THE NOTICE, OF WHICH THE ANNEXED IS A PRINTED COPY, HAS BEEN PUBLISHED IN EACH REGULAR AND ENTIRE ISSUE OF SAID NEWSPAPER AND NOT IN ANY SUPPLEMENT THEREOF ON THE FOLLOWING DATES, TO WIT:

04/11,18

ALL IN THE YEAR 2003

I CERTIFY (OR DECLARE) UNDER PENALTY OF PERJURY THAT THE FOREGOING IS TRUE AND CORRECT.

Sue Tastet

DATED AT BAKERSFIELD CALIFORNIA

April 18, 2003

First Text
BEFORE THE BOARD OF DIRECTORS OF THESEMI

Ad Number 840623

BEFORE THE BOARD OF DIRECTORS OF THE SEMITROPIC WATER STORAGE DISTRICT

Resolution No. ST 03-2
IN THE MATTER OF: RESOLUTION OF INTENTION OF SEMITROPIC WATER STORAGE DISTRICT TO DRAFT A GROUNDWATER MANAGEMENT PLAN

WHEREAS, adoption of a Groundwater Management Plan is in furtherance of and consistent with the District's adopted project approved by the landowners and the historical operations of the District; and
WHEREAS, Part 2.75 of Division 6 of the California Water Code permits the adoption and implementation of groundwater management plans to encourage authorized local agencies to manage groundwater resources within their service areas; and
WHEREAS, the Semitropic Water Storage District, acting for and on behalf of itself and its improvement districts (collectively the "District"), is an authorized local agency and may therefore adopt and implement such a groundwater management plan; and
WHEREAS, a public hearing was held on April 9, 2003 to discuss the adoption and implementation of a groundwater management plan; and
WHEREAS, the Board believes the groundwater can best be managed, as in the past, by local agencies in coordination with owners of lands overlying the groundwater basin; and
WHEREAS, the Board believes the adoption of a groundwater management plan will be in the best interests of the District's landowners and water users and can help meet the projected long-term water needs of the District;
BE IT RESOLVED, by the Board of Directors as follows:
The foregoing findings are true and correct;
1. It is the intention of the District to draft a groundwater management plan in accordance with Part 2.75 of Division 6 of the California Water Code, and the District's consultant is hereby authorized and directed to draft such a plan;
2. That this resolution shall be deemed a resolution of intention in accordance with California Water Code Section 10753.2;
3. After such a plan has been prepared, the District will conduct a second public hearing in accordance with the California Water Code Section 10753.5, et seq. to determine whether to adopt the plan;
4. That the staff is authorized and directed to publish this resolution of intention in accordance with the provisions of California Water Code Section 10753.3 and to provide interested persons with a copy of this resolution upon written request;
5. That the Board hereby authorizes its General Manager to execute all documents and take any other action necessary or advisable to carry out the purposes of this resolution.
I HEREBY CERTIFY that the foregoing resolution is the resolution of said District as duly passed and adopted by said Board of Directors on the 9th day of April, 2003.
WITNESS my hand and seal of said Board of Directors this 9th day of April, 2003.
/s/ James A. Crettol
Secretary of the Board of Directors

The BAKERSFIELD CALIFORNIAN
P.O. BOX 440
BAKERSFIELD, CA 93302

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APR 2 1 2003

Navigant CONSULTING, INC.

PROOF OF PUBLICATION

NAVIGANT CONSULTING
5100 CALIFORNIA AV

BAKERSFIELD CA 93309

Ad Number	840641	**PO #**	Groundwater P
Edition	TBC	**Run Times**	2
Class Code	2620 Legal Notices		
Start Date	4/11/03	**Stop Date**	4/18/03
Run Date(s)	04/11,18		
Billing Lines	52	**Inches**	4.33
Total Cost	172.56	**Account**	1BOO05
Billing Address	NAVIGANT CONSULTING 5100 CALIFORNIA AV BAKERSFIELD CA 93309		
Solicitor I.D.:	C010		

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STATE OF CALIFORNIA
COUNTY OF KERN

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AND WHICH NEWSPAPER HAS BEEN ADJUDGED A NEWSPAPER OF GENERAL CIRCULATION BY THE SUPERIOR COURT OF THE COUNTY OF KERN, STATE OF CALIFORNIA, UNDER DATE OF FEBRUARY 5, 1952, CASE NUMBER 57610; THAT THE NOTICE, OF WHICH THE ANNEXED IS A PRINTED COPY, HAS BEEN PUBLISHED IN EACH REGULAR AND ENTIRE ISSUE OF SAID NEWSPAPER AND NOT IN ANY SUPPLEMENT THEREOF ON THE FOLLOWING DATES, TO WIT:

04/11,18

ALL IN THE YEAR 2003

I CERTIFY (OR DECLARE) UNDER PENALTY OF PERJURY THAT THE FOREGOING IS TRUE AND CORRECT.

Elaine O'Kane

DATED AT BAKERSFIELD CALIFORNIA
4-18-03

First Text
NOTICE OF PREPARATION OF GROUNDWATER MA

Ad Number 840641

NOTICE OF PREPARATION OF GROUNDWATER MANAGEMENT PLAN SEMITROPIC WATER STORAGE DISTRICT

NOTICE is hereby given that interested parties may participate in Semitropic Water Storage District's (District) development of a groundwater management plan pursuant to Part 2.75 (commencing at Section 10750) of Division 6 of the California Water Code. The existing Semitropic Groundwater Monitoring Committee will act as a "Technical Advisory Committee", which will provide technical review and comment during development of the Groundwater Management Plan. Further, this is to describe the manner in which other interested parties may participate; (1) request a copy of the "Basic Elements" to be addressed in the plan, (2) attend a meeting of the District's Board of Directors at 2:00 p.m. on May 14, 2003, at the District's office, to provide comment and/or indicate area of interest, (3) submit comments and/or indicate area of interest in writing, (4) request a copy of the draft plan when it is available for review (estimated to be about the end of May 2003), and (5) submit comments on the draft plan by calling the District's General Manager (Will Boschman), by delivering written comments to the District, and/or by attending a meeting of the District's Board of Directors at 2:00 p.m. on June 11, 2003, at the District's office, at which time adoption of the plan will be considered. The District's office may be reached at (661)-327-7144 or at 1101 Central Avenue, Wasco, CA. The District's mailing address is P.O. Box 7, Wasco, CA 93280.
April 11, 18, 2003 (#840641)

1101 Central Avenue, P.O. Box Z, Wasco, CA 93280-0877

Telephone: (661) 758-5113 Bakersfield: (661) 327-7144
Facsimile: (661) 758-3219 E-mail: semi@lightspeed.net

MEMORANDUM

DATE: August 27, 2003

TO: Semitropic Groundwater Monitoring Committee
Marty Milobar, Buena Vista WSD
Dana Munn, North Kern WSD
Hal Crossley, Rosedale-Rio Bravo WSD
Jerry Ezell, Shafter-Wasco ID
Bill Carlisle, Southern San Joaquin MUD
Ken Schmidt, Kenneth D. Schmidt and Associates

Kern County Water Agency
Tom Clark

FROM: Will Boschman

SUBJECT: DRAFT GROUNDWATER MANAGEMENT PLAN

This is to transmit a Draft of a Groundwater Management Plan for Semitropic Water Storage District. We would appreciate any comments or suggestions prior to our September Board Meeting (scheduled for September 10, 2003), inasmuch as we hope to consider adoption of the Plan at that time. Please call me if you have any questions or if you would like to discuss your comments or suggestions.

Attachment

The BAKERSFIELD CALIFORNIAN
P.O. BOX 440
BAKERSFIELD, CA 93302

PROOF OF PUBLICATION

Ad Number	907214	**PO #**	110647 27.0
Edition	TBC	**Run Times**	2
Class Code	2620 Legal Notices		
Start Date	8/27/03	**Stop Date**	9/3/03
Run Date(s)	08/27, 09/03		
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Total Cost	156.16	**Account**	1BOO05
Billing Address	NAVIGANT CONSULTING 5100 CALIFORNIA AV BAKERSFIELD CA 93309		
Solicitor I.D.:	C010		

NAVIGANT CONSULTING
5100 CALIFORNIA AV

BAKERSFIELD CA 93309

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COUNTY OF KERN

I AM A CITIZEN OF THE UNITED STATES AND A RESIDENT OF THE COUNTY AFORESAID: I AM OVER THE AGE OF EIGHTEEN YEARS, AND NOT A PARTY TO OR INTERESTED IN THE ABOVE ENTITLED MATTER. I AM THE ASSISTANT PRINCIPAL CLERK OF THE PRINTER OF THE BAKERSFIELD CALIFORNIAN, A NEWSPAPER OF GENERAL CIRCULATION, PRINTED AND PUBLISHED DAILY IN THE CITY OF BAKERSFIELD COUNTY OF KERN,

AND WHICH NEWSPAPER HAS BEEN ADJUDGED A NEWSPAPER OF GENERAL CIRCULATION BY THE SUPERIOR COURT OF THE COUNTY OF KERN, STATE OF CALIFORNIA, UNDER DATE OF FEBRUARY 5, 1952, CASE NUMBER 57610; THAT THE NOTICE, OF WHICH THE ANNEXED IS A PRINTED COPY, HAS BEEN PUBLISHED IN EACH REGULAR AND ENTIRE ISSUE OF SAID NEWSPAPER AND NOT IN ANY SUPPLEMENT THEREOF ON THE FOLLOWING DATES, TO WIT:

08/27, 09/03

ALL IN THE YEAR 2003

I CERTIFY (OR DECLARE) UNDER PENALTY OF PERJURY THAT THE FOREGOING IS TRUE AND CORRECT.

Sue Lostie

DATED AT BAKERSFIELD CALIFORNIA
Sept 3, 2003

First Text
NOTICE OF PUBLIC HEARING AND AVAILABILIT

Ad Number 907214

NOTICE OF PUBLIC HEARING AND AVAILABILITY OF DRAFT GROUNDWATER MANAGEMENT PLAN SEMITROPIC WATER STORAGE DISTRICT

NOTICE is hereby given that (a) Semitropic Water Storage District has prepared a draft groundwater management plan pursuant to Part 2.75 (commencing at Section 10750) of Division 6 of the California Water Code, (b) copies of the draft plan may be obtained for the cost of reproduction at the office of the Semitropic Water Storage District, located at 1101 Central Avenue, Wasco, California 93280, and (c) a public hearing will be held on September 10, 2003, at 3:00 p.m. at the office of the Semitropic Water Storage District to determine whether to adopt the plan. Written comments may be sent to the District at P. O. Box Z, Wasco, CA 93280 and must be received by or before 3:00 p.m. on September 10, 2003. By way of summary of the draft plan, it is consistent with the District's projects and it includes sections which address the management area; groundwater basin characteristics; surface water supplies and demand; conjunctive use of surface water and groundwater; groundwater banking project; conservation; management of groundwater extractions; regional agency involvement; basin management objectives; monitoring; data management, interpretation, and reporting; and public and agency involvement.
August 27, September 3, 2003
(#907214)

AGENDA

SEMITROPIC WATER STORAGE DISTRICT
ACTING FOR AND ON BEHALF OF ITSELF AND SEMITROPIC IMPROVEMENT DISTRICT,
BUTTONWILLOW IMPROVEMENT DISTRICT, AND POND-POSO IMPROVEMENT DISTRICT
REGULAR MEETING OF BOARD OF DIRECTORS
Wednesday, September 10, 2003 at 2:00 p.m.

1. Call to Order: President Rick Wegis

2. Acknowledgment of guests:

3. Public Comment Period

4. Potential Action Items:
   (a) Approval of Agenda - Asterisk (*) indicates a change from the posted Agenda
   (b) Approve Minutes:
   Regular Meeting: August 13, 2003
   Adjourned Meeting: August 20, 2003
   (c) Approve Treasurer's Report:
   Semitropic Water Storage District
   Semitropic Improvement District
   (d) Approve Payment of Bills as listed on the Current Disbursement List, dated September 10, 2003.
   (e) Preliminary Consideration of SWRU Financing Plan
   (f) Consider Authorization for Puchase of Pipe for 2003-2004 Winter Work
   Under Emergency Provisions of Purchase Policy

5. Informational and Up-Date Items:
   (a) Water Supply Update
   (b) Delinquencies
   (c) Banking Project Update
   (d) Energy Activities

6. Consulting Engineers: Navigant (B-E) Progress Report

PUBLIC HEARING 3:00 p.m. - Determine Whether to Adopt a Groundwater Management Plan

7. Legal Counsel: Ernest A. Conant-
   CLOSED SESSION
   Govnmt. Code 54956.8, 54956.9(a) & 54957 - in order to confer with
   legal counsel regarding land acquisitions, pending litigation and personnel matters

8. Old Business/Correspondence

ADJOURNMENT - To 2:00 p.m. September 22, 2003

MINUTES OF THE REGULAR MEETING OF THE BOARD OF DIRECTORS OF THE SEMITROPIC IMPROVEMENT DISTRICT, BUTTONWILLOW IMPROVEMENT DISTRICT AND POND-POSO IMPROVEMENT DISTRICT OF SEMITROPIC WATER STORAGE DISTRICT

Convened at 2:00 p.m. on Wednesday September 10, 2003

The regular meeting of the Board of Directors was called to order by President Wegis on Wednesday, September 10, 2003, at 2:00 p.m., at the offices of the District, 1101 Central Avenue, Wasco, California.

Directors Present: **Ted Page, Dan Waterhouse, and Fredrick A. Wegis;**

Directors Absent: **James A. Crettol, Jeff Fabbri, Larry Frey, and Phil Portwood**

Others Present: **General Manager, Wilmar L. Boschman;**
District=s Engineer, Paul Oshel;
District=s Controller, Bill Walker;
District's Accountant, Judy Burns;
District=s Administrative Secretary, Marsha Payne;
District landowners, Larry Frey and Todd Tracy.

President Wegis opened the meeting and welcomed the visitors. Due to the lack of a quorum, no Board action was taken; however, several items on the Agenda were discussed.

2003-2004 Winter Work

Manager Boschman stated that District water users have been notified of construction shut-down dates. In order to meet construction deadlines, reinforced concrete pipe for the Wildwood siphon will need to be ordered soon. Discussion followed on the various phases of winter work.

Water Supply

Manager Boschman reported that the District continues to get requests to store water from Banking Partners and various other entities. Noncontract was is expected to continue into next year. Long range weather projections were discussed.

Banking Project Update

The Manager reported that a proposal was submitted to Imperial Irrigation District to enter into an agreement for a dry-year water supply; however, there has been no response to date.

Discussion followed on the Bakersfield Business Conference scheduled for October 12, which in the past, the District has invited various Banking Partners's upper management and Directors to attend as its guests. It is also a good time to acquaint others with the District's groundwater banking program.

SEMITROPIC WATER STORAGE DISTRICT
PUBLIC HEARING
NOTICE OF INTENTION TO ADOPT A
GROUNDWATER MANAGEMENT PLAN & HEARING OBJECTIONS

President Wegis called the hearing to order at 3:00 p.m.. President Wegis stated that the reason for the hearing was to receive comments from the public regarding whether or not the Semitropic Water Storage District should adopt a resolution of intention to adopt a groundwater management plan pursuant to the California Water Code. Notice was published in the Bakersfield Californian and proper requirements have been met.

It was noted that there were no guests present regarding hearing matters, and no written comments had been received by the District.

There being no quorum present, President Wegis stated that action will follow at the September 22 Board meeting. The public hearing was closed at 3:10 p.m.

Adjournment

At 4:00 p.m. the meeting was adjourned by President Wegis until Monday, September 22, 2003 at the District office to continue the business of the District.

James A. Crettol, Secretary

APPROVED:

Fredrick A. Wegis, President

BEFORE THE BOARD OF DIRECTORS OF
SEMITROPIC WATER STORAGE DISTRICT

IN THE MATTER OF: **RESOLUTION ST 03-7**

TO ADOPT A GROUNDWATER MANAGEMENT PLAN

WHEREAS, adoption of a Groundwater Management Plan is in furtherance of and consistent with the District's adopted project approved by the landowners and the historical operation of the District; and

WHEREAS, Part 2.75 of Division 6 of the California Water Code permits the adoption and implementation of groundwater management plans to encourage authorized local agencies to manage groundwater resources within their service areas; and

WHEREAS, the Semitropic Water Storage District (the "District") is an authorized local agency and may therefore adopt and implement such a groundwater management plan; and

WHEREAS, a first public hearing was held on April 9, 2003 to discuss the adoption and implementation of a groundwater management plan; and

WHEREAS, the District passed, and subsequently published, Resolution ST 03-2 of Intention to Draft a Groundwater Management Plan; and

WHEREAS, the District's consultant prepared a Groundwater Management Plan at the direction of the District Board of Directors; and

WHEREAS, a second public hearing was held on September 10, 2003 in accordance with the California Water Code Section 10753.5, et seq. to consider adoption of the proposed Groundwater Management Plan and no comments were submitted on the proposed plan; and

WHEREAS, the Board believes that the adoption of the proposed Groundwater Management Plan is in the best interests of the District and its landowners and water users and can help meet the projected long-term water needs of the District;

NOW, THEREFORE, BE IT RESOLVED, that:

(1) The foregoing findings, and each of them, are true and correct.

(2) The District approves and adopts the Groundwater Management Plan in accordance with Part 2.75 of Division 6 of the California Water Code, as prepared by the District's consultant subject to a majority protest not being filed as prescribed at California Water Code Section 10753.6.

(3) The Board hereby authorizes the officers and staff of the District to execute all documents and take any other action necessary or advisable to carry out the purpose of this resolution.

All the foregoing being on motion of Director Crettol, seconded by Director Fabbri, and authorized by the following vote, to wit:

AYES:	Directors Crettol, Fabbri, Page, Portwood, Tracy, Waterhouse and Wegis
NOES:	None
ABSTAIN:	None
ABSENT:	None

I HEREBY CERTIFY that the foregoing resolution is the resolution of said District as duly passed and adopted by said Board of Directors on the 22nd day of September 2003.

WITNESS my hand and seal of said Board of Directors this 22 day of September 2003.

Wilmar L. Boschman
Asst. Secretary of the Board of Directors